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JGC Report 2022

Enhancing planetary health

JGC HOLDINGS CORPORATION

A collaborator providing realistic solutions, taking on global issues

The world is moving toward sustainability, but besides the challenge of accelerating decarbonization over the medium to long term, nations now face the urgent matter of ensuring energy security. Aiming to be a partner and collaborator providing realistic solutions to global stakeholders of all kinds who are pressed for solutions, the JGC Group will keep increasing corporate value by continuing to move forward with confidence on the course charted in 2040 Vision, our long-term management vision. We have defined our purpose as creating a more prosperous future by enhancing the intertwined health of people and the earth.

Contents

Enhancing planetary health

The Group's purpose is defined to reflect our message of creating a more prosperous future by pursuing the intertwined health of humans and the earth.

Editorial Policy

Purpose of This Report
The purpose of the JGC Report, which was first published in 2015, is to explain to stakeholders how the JGC Group works to generate sustainable growth and increase corporate value over the medium to long term. JGC uses this report as a tool to communicate with stakeholders as part of its efforts to deliver sustainable growth through continuous, constructive dialogue.

Organizations Covered
In this report, "JGC Group" and "the Group" refer to JGC Holdings Corporation and its subsidiary operating companies.

Period Covered
In principle, the report covers the period from April 2021 to March 2022 (fiscal 2021), but also includes information related to events from April 2022.

Information Provided
The JGC Report summarizes and presents the most relevant information related to the JGC Group and society. For detailed and comprehensive financial and non-financial information about the Group, please visit the JGC website.

Forward-Looking Statements
Data and forecasts disclosed in this report are based on judgments and information available at the time of publication. The Company provides no guarantee for targets, forecasts, and earnings projections, which may change due to a range of factors.

Reference Guidelines
JGC Report 2022 was compiled referring to the disclosure framework of the IFRS Foundation and the World Intellectual Capital Initiative (WICI), as well as "Guidance for Collaborative Value Creation" of the Ministry of Economy, Trade and Industry (METI).

Management Messages

Message from the Chairman and CEO

Masayuki Sato
Representative Director, Chairman,
and Chief Executive Officer (CEO)

Has worked in finance and accounting since joining JGC in 1979, overseeing finance for the Middle East, North Africa, Southeast Asia, and CIS projects. Appointed as a director in June 2010, CFO and Managing Director, Senior General Manager of the Corporate Administrative & Financial Affairs Division in July 2011, and Executive Vice President in June 2012. Representative Director and Chairman as of June 2014 and CEO as of June 2017.

Collaborating on Global Issues

A world where the hands of time have been turned back

The past few years have seen an accelerated trend toward decarbonization, as moves to build a sustainable society drive a transition from fossil to renewable energy sources. Fiscal 2021 did remind people that fossil fuel still plays an important role in meeting immediate energy needs, and that liquified natural gas (LNG) and natural gas remain significant as transitional energy sources in the shift to decarbonization. The reminder was spurred by returning energy demand, as the global economy began to recover under less pressure from the COVID-19 pandemic, and by a shortfall of wind power in the UK. Conditions in Ukraine since the end of February 2022 then presented the West with a new challenge in ensuring energy security. Accordingly, the matter of how to meet growing energy demand in one's country, and the revival of fossil fuel in this context, has emerged as a pressing issue. When we consider the environment surrounding the world's energy supply, it is as if the clock has been turned back to an era centered on fossil energy.

A corporate group providing realistic solutions

What's truly required now, under these conditions, is to reconcile the two conflicting issues of accelerating decarbonization for sustainability and meeting energy demand that is increasing. It is not a matter of finding solutions to only one of these conflicting issues. We must meet immediate and growing energy demand by quickly providing transitional energy sources such as LNG and natural gas as a bridge to decarbonization while keeping our medium- to long-term focus on accelerating the transition.

In the long-term management vision (2040 Vision) formulated by the JGC Group last year, we redefined our purpose as "Enhancing planetary health" and identified three social issues to be addressed: balancing energy stability with decarbonization, reducing the environmental impact of resource consumption, and building and maintaining vital infrastructure and services. We also adopted a stance of expanding from oil and gas into the five business areas of energy transition, healthcare & life sciences, high-performance functional materials, circular economy, and industrial & urban infrastructure.
(Overview of 2040 Vision, the Group's Long-Term Management Vision, p. 29)

CEO Message

Message from the Chairman and CEO

> “As a collaborator taking on global issues, we will enhance our corporate value by demonstrating our presence more than ever before.”

Two social issues addressed under the 2040 Vision—balancing energy stability with decarbonization and reducing the environmental impact of resource consumption—are indeed pressing issues for the world today, and the five businesses slated for expansion are the very areas that will be essential socially and industrially on the path to sustainability and when this goal is achieved.

In the core area of energy transition, we are focusing in particular on our existing oil and gas segment and on the shift to low carbon / decarbonization. The JGC Group has built many plants worldwide for this segment, which is also closely associated with the key transitional energy resources of LNG and natural gas which have again been globally recognized for their importance. Besides focusing on business as usual here, we are also putting efforts into low carbon / decarbonized technologies such as carbon capture and storage (CCS). Moreover, we are taking an active stance on expansion in the area of clean energy—hydrogen / fuel ammonia, wind power, small modular reactors (SMRs), and other business.

We know with conviction that by building on our technical expertise, the JGC Group is positioned to contribute to solutions for the global issues of decarbonizing and meeting growing energy demand. We also know we must be the rare equal partner who can provide realistic solutions, whether to countries, clients, or a range of other stakeholders who face these pressing issues—a collaborator in taking on global issues. To fulfill our calling, I am determined as CEO to move forward firmly and unwaveringly toward the 2040 Vision.

Honing four competitive strengths

This year’s integrated report takes a fresh look at the four strengths of vision, technical expertise, management capabilities, and risk management, which play an important role in value creation (p. 19) as well as working toward sustained growth, in line with the 2040 Vision and as an ally in addressing global issues. The report also discusses how we are further honing these strengths to steadily transform engineering procurement, and construction (EPC) operations, expand high-performance functional materials manufacturing, and establish future engines of growth. These are key strategies in the medium-term business plan “Building a Sustainable Planetary Infrastructure 2025 (BSP 2025),” the first phase (fiscal 2021–2025) of the 2040 Vision.

As the source of competitiveness enabling sustained Group growth, the strengths have been cultivated for over more than 90 years since our founding in 1928 as we have anticipated changes and constantly taken on transformation. They are the core of what makes us as the JGC Group. Even in a rapidly changing market environment, the four strengths make us competitive today and tomorrow, and further reinforcement will support sustained growth.

Developing and strengthening sustainability governance

As the world pursues sustainability, attaining higher corporate value will mean improving and striking the right balance of the economic, social, and environmental value that we provide. Among these, we sought to enhance social and environmental value in fiscal 2021 by developing and strengthening sustainability governance, as a management resource for continuous growth (p. 49). A basic policy on sustainability was established as a higher-level concept reflecting materiality, our long-term management vision, and medium-term business plan. We also established the Sustainability Committee, which I chair, and subcommittees that guide Group efforts supporting net-zero emissions, human rights, diversity and inclusion, and a variety of other measures. We will continue to develop and strengthen the management resources for sustainability governance for further growth while actively contributing to enhanced social and environmental value.

Looking ahead

I will continue to exercise firm leadership as CEO, and our corporate value will be further enhanced as the JGC Group gains prominence as a collaborator in taking on global issues to meet the expectations of shareholders and investors, whose ongoing support we deeply appreciate.

Message from the President and COO

Resolving Challenges and Managing Risk as Needed for Continuous Growth

Fiscal 2021: Firmer footing for future growth

In fiscal 2021, crude oil and gas prices soared on the back of higher energy demand as markets looked ahead to a post-pandemic future, giving the impression that after several years of sluggishness in EPC business, this market environment had turned the corner toward recovery. The timing of some orders slipped into the next fiscal year, which kept this year's total at ¥315.9 billion and short of our original ¥500 billion target. However, this was due to the time required to negotiate the contracts of promising projects in order to account for higher materials, equipment, and transport costs due to conditions in Ukraine.

As for performance, although we regrettably recorded a net loss attributable to owners of the parent due to an extraordinary loss in the Ichthys LNG project in Australia, we significantly improved our gross profit ratio, which represents the earnings capacity of an engineering company, from an initial forecast of 8.1% to 10.6%. A weaker yen was not the only reason for this, nor was moving on from unprofitable projects. Improved profitability came from the robust management of current projects, as well as increased revenue from functional materials manufacturing, partly from expansion of the semiconductor market.

In general, as the market environment began to recover for our EPC and functional materials manufacturing segments, our orders and business performance in fiscal 2021 were solid enough to provide a firmer footing for the future.

Executing key strategies with a sense of speed

Fiscal 2021 also marked the start of BSP 2025, the medium-term business plan. To summarize our progress this first year, we saw steady results in the three key strategies of transforming EPC operations, expanding high-performance functional materials manufacturing, and establishing future engines of growth. There was speed, but we did not miss potential opportunities.

Several measures were taken in transforming our EPC business. Mr. Farhan Mujib, a veteran in the EPC industry outside of Japan with a broad personal network of clients and other professional acquaintances, was appointed president of JGC Corporation, our EPC operating company. To improve competitiveness in securing orders through account-focused sales in Southeast Asia and reinforce project execution capabilities there, JGC Asia Pacific Pte. Ltd. was established in January 2022 as a headquarters in Singapore, which has strengthened our framework for regional management. Domestically, pharmaceuticals remain a growth segment, and in anticipation of expansion in the new modalities market, we increased our project execution capacity for the pharmaceutical manufacturing sector by acquiring the pharmaceutical plant EPC business of a company in this industry. These measures were also successful, and record pharmaceutical orders were received in fiscal 2021. Looking ahead, our digitalization of EPC (EPC DX) undertaken for greater competitiveness and profitability in large-scale projects will reach a milestone in digital project delivery from April 2023. EPC DX has already been implemented in a refinery upgrading project in Iraq where construction is underway.

Measures to expand high-performance functional materials manufacturing in fiscal 2021 included stepping up production and sales of silica sol for hard disk polishing, expanding catalyst sales overseas, developing catalysts that support decarbonization, and starting full-scale production at a high thermal conductivity silicon nitride substrate plant. With applications such as EV / HEV power semiconductors expected to drive growth of this substrate market, we are taking a proactive stance toward facility investment that will further increase production capacity.

In measures to establish future engines of growth in fiscal 2021, we were particularly active in the areas of hydrogen / fuel ammonia and circular economy. In hydrogen / fuel ammonia, we have already received orders overseas for feasibility studies and front-end engineering and design (FEED), which are among the signs of future market expansion. Significantly greater demand in Japan and elsewhere is expected from 2030 to 2050. This has set the stage for initiatives such as forming an alliance with Toyo Engineering Corporation for fuel ammonia EPC business and concluding a license agreement with U.S.-based KBR Inc. for an ammonia production process. In support of a circular economy, the JGC Group along with airline companies and other participants established a voluntary organization called "Act For Sky" to promote widespread adoption of sustainable aviation fuel (SAF) and to enlighten the public. A collaborative agreement was concluded to supply used cooking oil as a raw material from sources such as restaurants at three airports operated by Kansai Airports, to an SAF plant slated for construction at the Sakai Refinery of Cosmo Oil Co., Ltd. Additionally, on September 1, 2022, JGC Corporation established a new organization combining sales, project execution, and business development functions for sustainability-related

Tadashi Ishizuka
Representative Director,
President and Chief Operating Officer (COO)

Managed numerous projects outside of Japan after initially working in the Domestic Project Construction Division in 1972. Appointed Managing Director and Senior General Manager of the Project Operation Services Division in June 2008, Senior Managing Director in 2010, Executive Vice President and Board Director in June 2011, and Senior Executive Vice President and CPO in February 2017, and President and COO in June of that year.

COO Message

Message from the President and COO

business. Resources previously dispersed within the Group will be consolidated as our work to establish future engines of growth gains momentum.

Fiscal 2022 order target and earnings forecast

We are targeting ¥840 billion in orders for fiscal 2022, about 2.5 times the level of orders received for fiscal 2021. This figure reflects both the clear recovery in our EPC market environment and, from the standpoint of energy security, a likely increase in demand for LNG and natural gas. Of this amount, we are seeking ¥670 billion in orders from overseas EPC business, which includes energy solutions and facility infrastructure solutions. The energy solutions business is already off to a good start, with orders including a construction project for a large oil and gas separation plant in Saudi Arabia and a chemical plant expansion project in Thailand. Active sales activities are planned that will help secure orders for gas chemical projects in the U.S. and Middle East, as well as LNG projects in the U.S. and Southeast Asia and other opportunities.

JGC Corporation's Facility Infrastructure Solutions will continue to pursue account-focused sales for clients mainly in Southeast Asia, leveraging our technical expertise as an engineering company to make proposals. Among other projects, we will be working to secure orders for solar power plants with energy storage systems, as well as tenant factories in industrial parks. In the domestic EPC area, the market environment is expected to be as robust as in fiscal 2021. We are targeting orders of ¥170 billion, primarily by actively engaging in the pharmaceutical sector, where substantial investment is anticipated in applications such as biopharmaceuticals and vaccine production, and in areas where corporate decarbonization and circular economy initiatives are taking shape, such as demonstrations of blue hydrogen and production of the biofuel SAF.

In functional materials manufacturing, besides working to secure new chemical catalyst projects, we will be developing materials for clean energy applications and moving into new fields, and in fine chemicals we will steadily expand applications for existing products, as in semiconductor and life science applications. In fine ceramics, although business in the active semiconductor market is likely to temporarily slow, we will be preparing for future growth by focusing on further increasing production of ceramics used in semiconductor production, as well as high thermal conductivity silicon nitride substrates. Acquisition of a new site in Sendai for this purpose is planned, calling for investing a total of ¥10 billion including land costs. In fine ceramics, production capacity will be further increased by the start of operations at JFC Materials Co. Ltd. on July 1, 2022, following acquisition of the business from Showa Denko Materials Co. Ltd.

As announced in the first quarter results, forecasts for fiscal 2022 were revised upward as follows: net sales of ¥620 billion, gross profit of ¥57 billion (gross profit ratio of 9.2%), operating profit of ¥28 billion, ordinary profit of ¥36 billion, and net profit attributable to owners of the parent of ¥24 billion. We expect significantly higher net sales compared to fiscal 2021, backed by steady progress in large-scale EPC projects and market conditions that remain robust for our functional materials manufacturing. Profit is expected to be up from fiscal 2021 as we maintain solid EPC project management.

Continuing to grow by resolving challenges and managing risk

With EPC market growth expected, the JGC Group may well be within range of achieving the financial targets of BSP 2025—net sales of ¥800 billion, operating profit of ¥60 billion, and net profit attributable to owners of the parent of ¥45 billion. We will therefore do our utmost in meeting challenges and management of risk to meet our order target and earnings forecast for this fiscal year as the first step toward this goal.

While meeting our order target for fiscal 2022, we recognize that expanding our project execution capacity is essential as we expect to provide EPC services to a growing market in fiscal 2023 and beyond. We plan to steadily respond and maintain market expansion through measures such as increasing personnel at certain sites (at overseas EPC operating company JGC Corporation and the Asian regional headquarters JGC Asia Pacific) and establishing a new center for operations in India that will be fully operational by the end of fiscal 2023. With more projects expected to appear in the future, we will be renewing our ultimate commitment to generating anticipated revenue by reliably managing the risk for each project, as we concentrate even more on selecting projects which we are optimistic about winning.

“It will be essential from an early stage to foresee and identify these challenges and risks as well as implement solutions with a sense of certainty and speed.”

Meanwhile, the JGC Group remains keenly aware that maintaining stable earnings calls not only for the greater project execution capacity already mentioned but also responsive risk management when executing projects under current conditions. In fiscal 2021, amid global economic recovery, we saw a worldwide trend toward inflation intensify, especially after events in Ukraine from February 2022, and there is a sense that this trend has further accelerated. We recognize that unless we remain responsive to higher materials and equipment costs, these costs pose a serious risk to profitability whether projects are at the bidding stage or are underway. This risk was accounted for in contract negotiations for a large oil and gas separation plant in Saudi Arabia that was received at the beginning of fiscal 2022, and it was assessed for pending orders in all current domestic and overseas projects in the fourth quarter of fiscal 2021 and applied to the cost of sales in the fiscal 2022 earnings forecast. We will continue to monitor changes in market conditions regarding this risk, and besides responding appropriately in current projects, we will pursue risk-sharing with clients and vendors to minimize any risk of this kind that emerges, to maintain our desired gross profit margin.

Wrapping up

It will be essential from an early stage to foresee and identify these challenges and risk—impediments to higher, market-driven sales and profit, to ensure the JGC Group is within range of the BSP 2025 targets—and to implement solutions steadily and with a sense of speed. This applies not only to our main EPC business and functional materials manufacturing, but also to business supporting sustainability which we view as a future growth engine.

Although the global economy may now be headed toward recovery as the impact of the pandemic fades, there are some concerns about recession amid higher prices and subsequent quantitative easing or tightening. Conditions remain unpredictable. To keep the JGC Group on track toward sustained growth, as COO I am committed to meeting shareholder and investor expectations by implementing measures with a sense of speed while monitoring these global economic and market environment developments. Thank you for your continued support.

Message from the Chief Financial Officer

Assertive and Defensive Financial Strategies Responding to Market Expansion

Kiyotaka Terajima

Director, Senior Executive Vice President, and Chief Financial Officer (CFO)

After joining JGC in 1981, established business alliances and developed contracts for domestic and overseas projects in the Legal Department. Appointed Executive Officer and Deputy General Manager of the Corporate Administrative & Financial Affairs Division in 2014, Director, Executive Officer, and Senior General Manager of the division in 2016 (Senior Executive Officer in 2017), Executive Vice President and CFO in April 2018, and Senior Executive Vice President in April 2020.

Summary of fiscal 2021 results

For fiscal 2021, the JGC Group reported net sales of ¥428.4 billion, gross profit of ¥45.3 billion, operating profit of ¥20.6 billion, and a net loss attributable to owners of the parent of ¥35.5 billion. The minimum dividend of ¥15 per share announced at the beginning of the fiscal year was approved at the General Meeting of Shareholders held in June.

The net loss attributable to owners of the parent was due to an extraordinary loss of ¥57.5 billion from reaching a settlement in the protracted matter of the Ichthys LNG project in Australia, which was the culmination of making a comprehensive assessment of the remaining risks of continued arbitration and economic rationality in consideration of future cash flow. Although a large final loss was recorded, resolving this protracted issue has eliminated future management uncertainty and created an environment for focusing on the goals of the long-term management vision and medium-term business plan. As of March 31, 2022, equity capital stood at ¥387.1 billion, with an equity ratio of 55.8%. As an engineering company mainly involved in EPC, we have ensured client trust and maintained a solid financial position for the business expansion ahead.

Toward the fiscal 2022 earnings forecast and greater capital efficiency

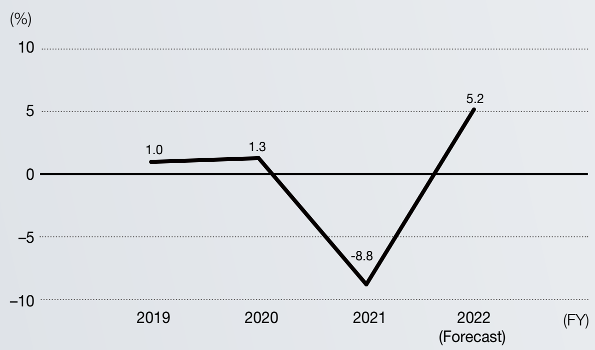
For fiscal 2022, we are targeting orders of ¥840 billion, about 2.5 times the fiscal 2021 level. This target was set in consideration of plant market growth, driven by factors such as recovery of energy demand and the higher global demand expected for the transitional energy sources of LNG and natural gas, with an eye on ensuring energy security. Moreover, we have revised our forecasts upward, as announced in first quarter results: net sales of ¥620 billion, gross profit of ¥57 billion, operating profit of ¥29 billion, and net profit attributable to owners of the parent of ¥24 billion. As for gross profit ratio, which is projected at 9.2%, the drop of 1.4% year on year is due to applying higher material and equipment cost risk to the cost of sales. Nevertheless, we do expect significantly higher sales and profit than in fiscal 2021, and the dividend per share was raised to ¥29 in line with the revised earnings forecast.

We anticipate a significant improvement in return on equity (ROE). After lower foreign tax credits increased the tax burden in fiscal 2019 and 2020 while profitability deteriorated in several overseas projects, a final loss in fiscal 2021 from the extraordinary loss in the abovementioned Ichthys LNG project led to a decline in ROE from 1.0% to 1.3% to -8.8% in these years. However, for fiscal 2022, ROE is expected to be 5.2%.

Unprofitable projects were eliminated in fiscal 2021, and as we look forward to stable profit from reliable project management, an increase in orders as the market expands would put us in a good position for improved ROE after fiscal 2022.

The medium-term business plan (BSP 2025) targets net sales of ¥800 billion, operating profit of ¥60 billion, net profit attributable to owners of the parent of ¥45 billion, and ROE at 10%, with 80% of net sales expected to be generated by EPC business. We believe that for an engineering company maintaining sound finances is essential for earning client trust from the standpoint of ensuring risk resilience. Accordingly, we firmly believe that further improvement of ROE in fiscal 2022 onward will depend on increasing net profit attributable to owners of the parent while maintaining equity capital commensurate with expanded orders and backlog.

Return on equity (ROE)



Assertive and defensive financial strategies

As CFO, I will continue to pursue both defensive and assertive financial strategies. For the former, I will work to maintain sound finances with an equity ratio of 50% or more, secure working capital for the EPC operations required for increased sales, and respond promptly through financial means to risks that may affect our profitability, such as risk associated with higher material and equipment costs, as mentioned. At the same time, assertive strategies we will proactively implement include allocating funds to strategic investments indispensable for the three key BSP 2025 strategies of transforming EPC operations, expanding high-performance functional materials manufacturing, and establishing future engines of growth. In particular, we will move rapidly, but without missing opportunities, in strategic investments for the pressing matter of expanding project execution capacity to meet increased orders.

On this point, strategic investment in fiscal 2021 remained somewhat limited at about ¥16 billion, with this as the first year of BSP 2025. However, this investment funded enterprises among the BSP 2025 strategies likely to contribute to future earnings, such as EPC DX system development, establishment of our Southeast Asia headquarters, SMR business investment, pharmaceutical plant EPC capacity expansion, and high thermal conductivity silicon nitride substrate facility investment. The Group will also be ensuring effective investment governance before these strategic investments are made, with a system in place calling for deliberation by the Group Investment and Loan Committee deliberating on risk and return for the type of investment, as well as deliberation by the Board of Directors on the amounts to be invested.

Higher shareholder return over the medium to long term

During the period of the medium-term business plan, we are seeking a payout ratio of about 30% of net profit attributable to owners of the parent, with a minimum annual dividend of ¥15 per share. Share buyback will be studied as appropriate, in consideration of earnings forecast and free cash flow conditions.

Looking ahead, we intend to meet shareholder expectations by steadily attaining our BSP 2025 targets while making consistent progress in increasing the dividend per share and improving shareholder value over the medium to long term. We appreciate your continued understanding and support.

CFO Message

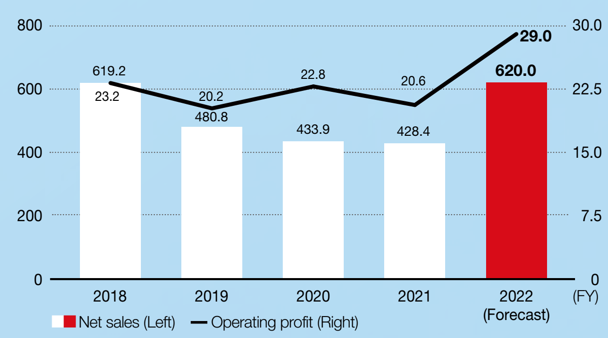
JGC Group’s Value-Creation Mechanism

Ever since the JGC Group was founded with a mission of supporting the foundations of industry and society at large, we have achieved sustained growth through corporate transformation always one step ahead of the times, consistently enhancing our corporate value in a rapidly changing business environment. Here, we describe the Group’s unmatched value-creation mechanism, look back at transformation that has honed supporting strengths, and examine each strength in detail.

JGC Group at a Glance

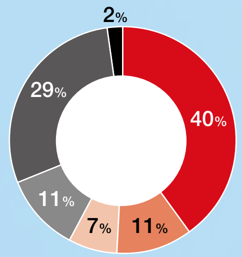
Through business focused on Total engineering and Functional materials manufacturing, the JGC Group is aiming to realize our purpose in "Enhancing planetary health," and ensuring continued growth of corporate value.

Net sales and operating profit

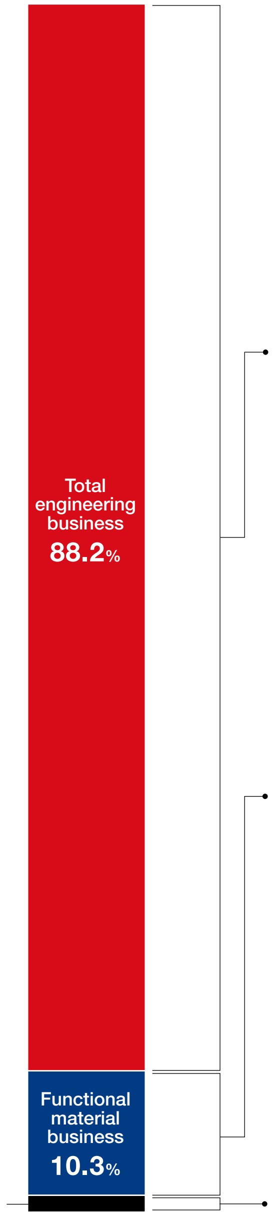


New contracts by region (Fiscal 2021)

(%)



Breakdown of Sales (Fiscal 2021)

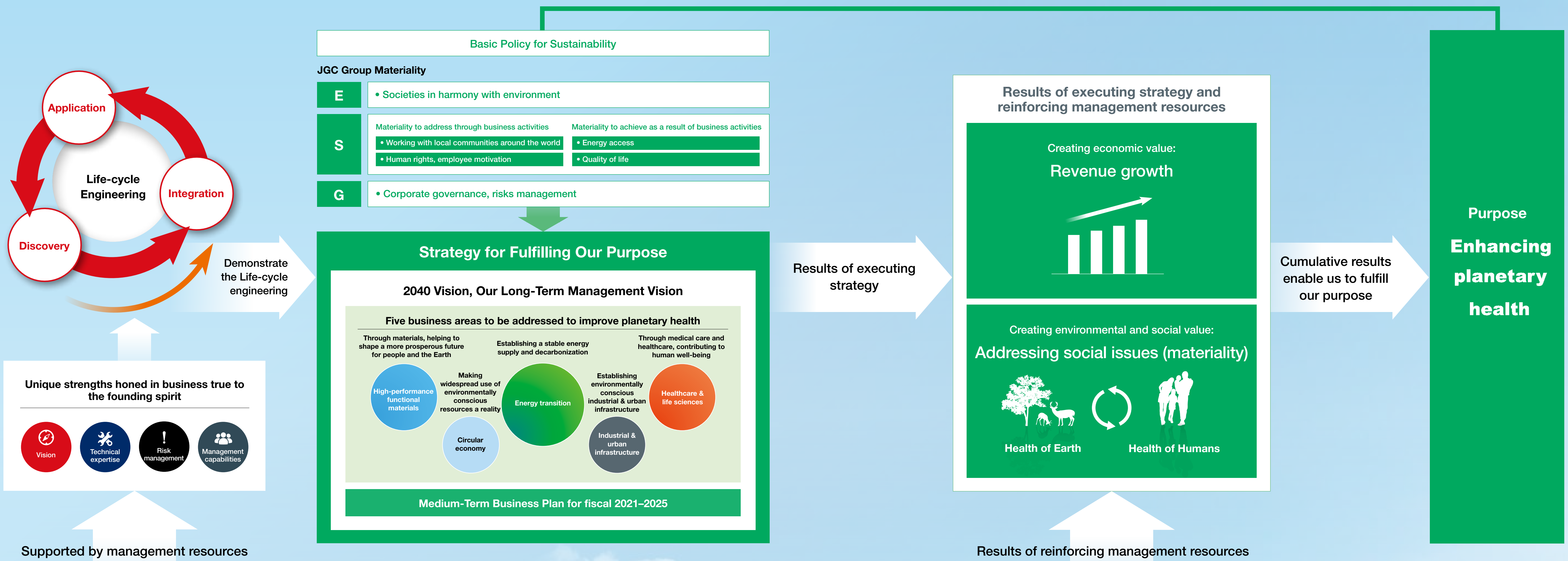


Business	Segment	Covered Sectors	Typical Products and Services	Employees* (Total: 6,992)
Total engineering business	JGC Corporation (Overseas business)	**Energy Solutions Sector** Engineering, procurement, and construction of plants and facilities in sectors such as LNG, CCS, refinery, chemicals, gas processing, crude oil and gas gathering, non-ferrous metal smelting, hydrogen, fuel ammonia, nuclear energy, etc.	 Floating LNG plant (Malaysia)  Ammonia synthesis pilot project facility (Fukushima)	5,636
		Facility Infrastructure Solutions Sector Engineering, procurement, and construction of infrastructure facilities focused on renewable energy power generation (solar, biomass, wind), battery energy storage, LNG / LPG terminals, waste power generation, pharmaceuticals and food factories, hospitals, airports, transportation infrastructure, water treatment, etc.	 Solar power plant (Vietnam)  API manufacturing plant (Japan)	
	JGC Japan Corporation (Domestic business)	**Domestic Sector** Engineering, procurement, construction, and maintenance of plants and facilities for oil & gas, power generation, chemicals, pharmaceuticals and laboratories, healthcare (medical and welfare), renewable energy power generation, hydrogen / fuel ammonia, resource recycling, nuclear energy-related, etc.		
Functional material business	JGC Catalysts and Chemicals Ltd.	**Catalysts and Fine Chemicals Sector** Development and production of catalysts used in petroleum refining, chemical, and environmental conservation and of fine chemical products used as materials in semiconductor, IT / electronics, optics, cosmetics, and other applications	 Oil refining catalysts  Silica sol for anti-reflective film on flat-screen TVs  Metal-matrix composites	966
	Japan Fine Ceramics Co., Ltd.	**Fine Ceramics Sector** Development and production of ceramic materials for semiconductor, automotive, telecommunications, industrial, medical, and aerospace applications		
	Other businesses **Main operating companies** Japan NUS Co., Ltd. and other domestic / overseas Group companies	Energy and environmental consulting, other business		390

* As of March 31, 2022. Does not include JGC Holdings, employees (283) or temporary staff in each segment.

Value-Creation Mechanism

The JGC Group has remained true to our founding mission of supporting the foundations of industry and society at large. Guided by materiality, we address social and industrial issues in a "Life-cycle Engineering" approach that applies our unique strengths to fulfill "Enhancing planetary health"—defined as the purpose of the JGC Group—and ensure continued growth of corporate value.



Management resources for sustainable growth

What Sustainability Means to the JGC Group P. 51

Sustainability management

Roles for the environment and society P. 53

Addressing climate change | Human rights compliance | Occupational health and society

Reinforcing management resources P. 57

Human capital initiatives | IP / Intangible asset initiatives | Quality management system | Corporate governance: Risk management, Compliance | Stakeholder engagement | Reinforcing financial base

P. 13 Message from the Chief Financial Officer

A History of the JGC Group

Unique Strengths Honed through Transformations

Taking on continuous evolution by anticipating coming changes guided by vision, has enabled JGC Group sustained growth even in turbulent business environments. Here we see how the Group has honed its unmatched competencies over the course of more than 90 years.

Founding

Founded for oil refining and sales, anticipating future demand

External environment, social needs
- Increasing motor vehicle use and demand for cheap gasoline
- Oil poised to become the main source of energy

It was in 1923 after a historic earthquake that motor vehicles started to take off in Japan, but more gasoline had to be imported to meet rapid demand. Entrepreneur Masao Saneyoshi saw Japan's future growth linked to domestic production of gasoline. What caught his attention was a more economical production method used with heavy oil that was acclaimed in the United States: the Dubbs cracking process of Universal Oil Products Co. (UOP) in Chicago. After repeated negotiations with UOP, Masao Saneyoshi acquired all patent and licensing rights for the Dubbs cracking process. In 1928, this process formed the basis for a new company he founded for oil refining and sales—Japan Gasoline Company, the predecessor to the JGC Group.

Expansion into engineering

Business model transformation using acquired process technologies

External environment, social needs
- Oil market crash from the Great Depression
- Growing demand for aviation fuel

The first refinery was planned for construction in Otsu (now Izumiotsu), Osaka, but local opposition and the domestic oil market crash following the Great Depression the previous year put an end to these plans in 1930. Business was then supported by licensing the Dubbs cracking process and patents on isooctane production to domestic oil refiners while venturing into aviation fuel plant design and construction by applying licensed process technologies to become Japan's first engineering firm. JGC also diversified business models at this time by taking on production of oil refining catalysts, our first foray into functional materials manufacturing.

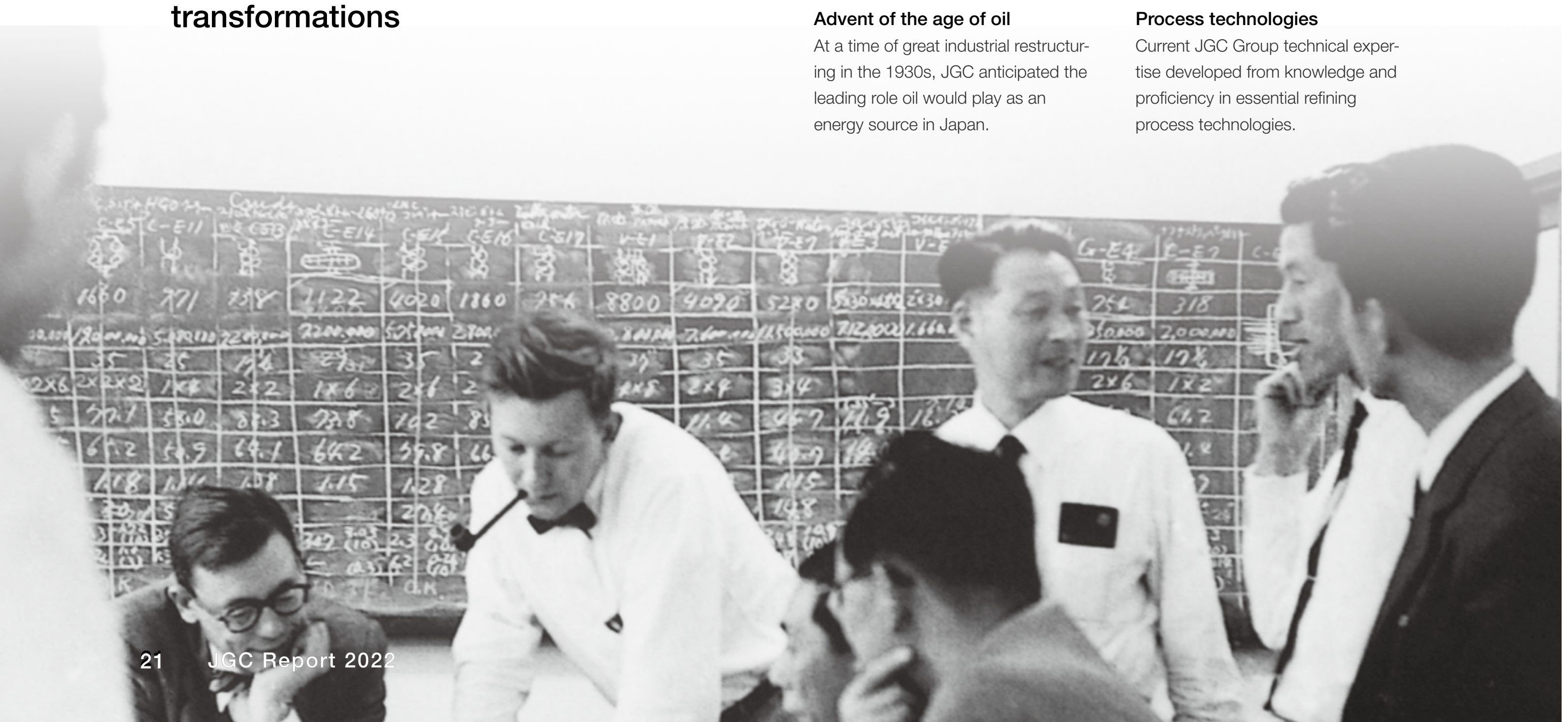
Japan's first engineering contractor

Establishment of EPC business model

External environment, social needs
- Bedrock for postwar recovery: oil and petrochemical industry
- Easier project management for clients

Domestic refiners resumed production about five years after the war, bringing JGC back into plant engineering and construction for the oil industry. At the time, plant construction generally involved submitting orders of each aspect of EPC to separate contractors, which made project management quite inconvenient for clients. But after Idemitsu Kosan awarded JGC a lump-sum EPC contract for their Tokuyama Refinery in 1956, Japan's first large-scale "grassroots" refinery project was complete in just 10 months. Through this project, JGC established the management capabilities needed to execute each phase from design to procurement and construction consistently, becoming the country's first general contractor. And through delivery of many other refineries and petrochemical complexes that enabled Japan's rapid economic growth, JGC has established and refined plant design technologies for these facilities.

Unique strengths honed through transformations



Vision

Advent of the age of oil
At a time of great industrial restructuring in the 1930s, JGC anticipated the leading role oil would play as an energy source in Japan.

Technical expertise

Process technologies
Current JGC Group technical expertise developed from knowledge and proficiency in essential refining process technologies.

Risk management

From refining to engineering business
Setbacks in the oil refining business were overcome to venture into the engineering business.

Technical expertise

Refinery design technology built up through design and construction for aviation fuel
Familiarity with process technologies enabled full-scale design and construction of oil refineries.

Vision

Key role of oil and petrochemical industry in Japan's rapid growth
JGC participated in new construction plans for oil refineries and petrochemical plants.

Management capabilities

Establishment of integrated project management
Attained the status of a general contractor, managing entire projects from design to procurement and construction.

Pick up Key JGC Group techniques and technologies

Process Design
Oil refineries that turn crude oil into products such as gasoline operate under high temperature and pressure. Design of the crude oil distillation process calls for extremely sophisticated core design technologies of the JGC Group.

Project Management
To complete plants on time, on budget, and at the level of quality required, we employ methods to rationally and scientifically control a variety of resources, including technology, human resources, materials and equipment, funds, and information.

Catalyst Production
Original core technologies for catalyst production are applied in nanoparticle (colloidal particle) preparation, alignment control, nano pore control, and macro structure control.

A History of the JGC Group

Expansion into overseas markets

Reinforcing risk management, building a project management system

External environment, social needs
- Decline in domestic refining, petrochemicals industry
- Rapid yen appreciation

Confronting overseas project risk

As investment in domestic oil refining and petrochemical production peaked, the JGC Group set its sights overseas to develop new markets. Expansion initially targeted areas including South America, North Africa, the Middle East, Asia, and Oceania, and by 1970 more than half of all orders were from outside Japan. By the 1980s, a level that had stood near 10% in the late 1960s regularly surpassed 80%. But with the expansion came severe environmental conditions; linguistic, religious, and cultural differences; a dearth of construction companies and experienced workers in developing economies; and many other forms of overseas project risk. Managing and overcoming these risks was no ordinary task, and many costly lessons were learned in the early years. Risk management was strengthened through each of these experiences, and by the 1980s, the Group had established a reputation as a reliable engineering firm that completed plants on time with the quality required.

Globalization of project resources

As more projects were executed overseas from the 1970s, fluctuations in the global economy inevitably shook the JGC Group. The world's adoption of floating exchange rates in 1973 put an end to the fixed ¥360/U.S. $1 exchange rate, and events such as the second oil crisis in the late 1970s and the Plaza Accord in the mid 1980s triggered a steep appreciation in the yen. For a company that had mainly used Japanese resources for EPC in initial expansion, these conditions undermined the competitiveness of orders and profitability of project execution. In response, the Group began a concerted effort to globalize EPC resources in the late 1970s. Regional engineering subsidiaries were established, international procurement offices set up, and a global resource management system constructed, among other steps to forge a project execution framework more resistant to foreign exchange risks.

More advanced project management

In this period when risk factors had multiplied, the JGC Group also focused on establishing methods of rationally and scientifically controlling complex projects outside Japan. An original project management system formally introduced in Kuwait refinery upgrading in the 1980s, in conjunction with resource globalization, earned the Group a reputation as an international engineering firm and the capabilities to prove it. To this day we continue to improve the system, which has become more sophisticated with advances in IT.

Expansion of business areas

Committed to entering growth industries and promising fields

External environment, social needs
- Fluctuation of the global economy, resource markets
- Emergence of new fields and industries

Concerted expansion overseas was always accompanied by the goal of cultivating fields beyond oil, petrochemicals, and other energy business sensitive to global economic fluctuations, with stable management and income smoothing in mind. As we continued to target emerging growth industries and promising fields for new business, we applied process engineering technology (cultivated through energy and chemical plants); broadly applicable detailed design technology for mechanical, architectural / civil, electrical, and structural analysis engineering; essential characteristics of engineering itself (creating new functionality by integrating and organizing various core technologies for a purpose); and project management capabilities. The EPC business grew to include nuclear power in the 1960s. In the 1980s, these services were expanded to life sciences applications such as pharmaceutical production, healthcare applications such as hospitals, and industrial infrastructure such as nonferrous refining. And in the 2000s, the JGC Group anticipated the trend toward global environmental conservation and cultivated renewable energy and CCS sectors. LNG in particular, which we pioneered in the 1970s by applying the low-temperature technologies used at ethylene plants, has grown considerably to become our main sector. Meanwhile, we have also diversified our business models. Examples include environmental / energy consulting and functional materials manufacturing of fine ceramics as well as applying nanotechnologies developed for catalyst business originally started in the 1940s, fine chemicals.

Unique strengths honed through transformations

Vision

Global energy market trends
A trend that emerged in the mid-1960s was for oil-producing countries to develop their own resources. Soon, the JGC Group set its sights on markets such as South America, North Africa, and Southeast Asia as the next areas for expansion.

Risk management

Establish risk management capability for overseas projects
Establishing a thorough risk management system in all aspects became essential to ensure steady revenue from overseas projects with much greater uncertainty.

Management capabilities

Advanced project management system
At the heart of JGC Group management capabilities lies an original project management system for rationally and scientifically controlling project resources.

Vision

Interdisciplinary application of energy plant process engineering, further expansion
Business area expansion has been possible by applying technical expertise gained in designing energy plants—used in applications such as nuclear power, pharmaceuticals, nonferrous refining, and renewable energy—to design plants and factories in other promising areas where this expertise is relevant.

Pick up

LNG plant engineering and construction

Technical expertise on liquefying natural gas is essential, but besides this only a few EPC contractors worldwide can match the Group's project execution capabilities for timely completion of large-scale LNG projects. We have more than a 30% share of the global LNG construction track record.

Pick up

Pharmaceutical plant engineering and construction

The JGC Group is behind the design and construction of more than 600 facilities involved in pharmaceutical production. We meet needs in this manufacturing area promptly, as drug discovery methods grow more diverse and sophisticated from small-molecule drugs to biopharmaceuticals to new modalities.

Four unique strengths supporting "Life-cycle Engineering"

Ever since JGC was founded in 1928, the Group has continued to grow through corporate transformation. The transformations built up four strengths that continue to drive a unique "Life-cycle Engineering" approach and sustained growth for the Group.

Accumulating knowledge

Apply keener insight from knowledge and expertise gained through projects and business

Building up knowledge

Build up knowledge and expertise from projects and business as a core competency

Knowledge and expertise from projects and business built up as a core competency

Vision

- Anticipating external environmental changes and future market needs, expanding business accordingly

Hone technical expertise, management capabilities, and risk management to be prepared for anticipated external environmental changes and future market needs

Three strengths that add value to projects and business

Three strengths combined by the JGC Group: technical expertise, management capabilities, and risk management

Management capabilities

- Leading and coordinating partners, vendors, and subcontractors as projects are executed
- Collaborating with and guiding diverse stakeholders to create new business

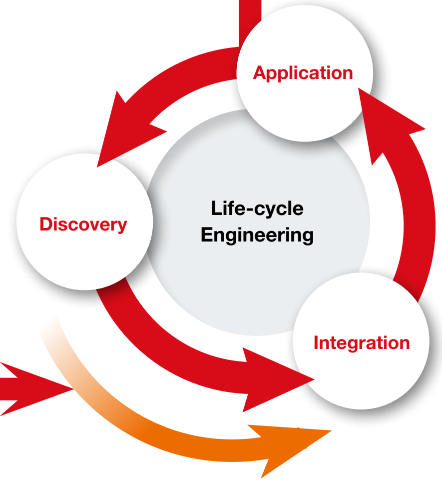
Risk management

- Anticipating risks, planning suitable countermeasures, and reliably implementing them
- Minimizing and overcoming unexpected risks that arise

Technical expertise

- Techniques / technologies for plant and facility design, project execution, and development and manufacturing of high-performance materials
- Introducing technology from other companies (open innovation)
- Integration that combines and optimizes an array of technologies

Add value to projects and business, responsive to needs and technical trends



Fulfilling Our Purpose

Having redefined our purpose as a corporate group and formulated a long-term management vision "2040 Vision" from a new outlook, the JGC Group is making steady progress in "BSP 2025," the medium-term business plan over the next five years. Here, we summarize these strategies and describe our progress in BSP 2025, how our strategies apply our strengths, and how we are honing these strengths to achieve the strategies.

Fulfilling Our Purpose

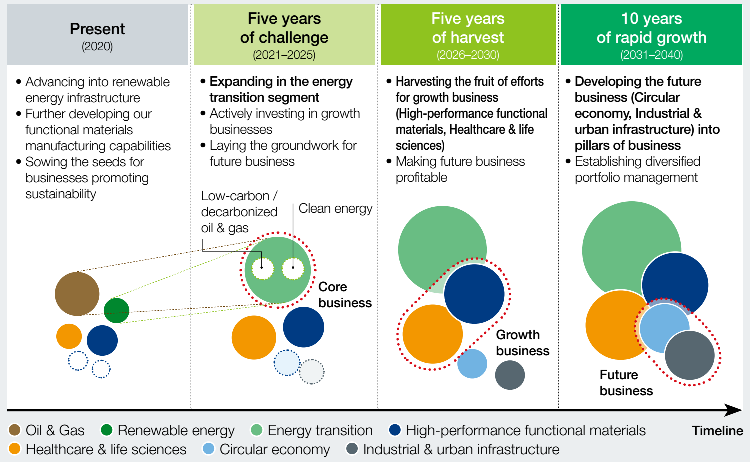
Overview of 2040 Vision, the Group's Long-Term Management Vision

Change is sweeping through our business environment. For the JGC Group to continue to enjoy sustained growth, we are responding swiftly and flexibly to these current trends. Based on the global, long-term perspective of Enhancing planetary health, we have recently established the 2040 Vision, anticipating the future 20 years from now. Through a transformation that spans business areas, business models, and our organization, we are gearing up for the challenge of becoming a corporate group that contributes to enhancing planetary health.

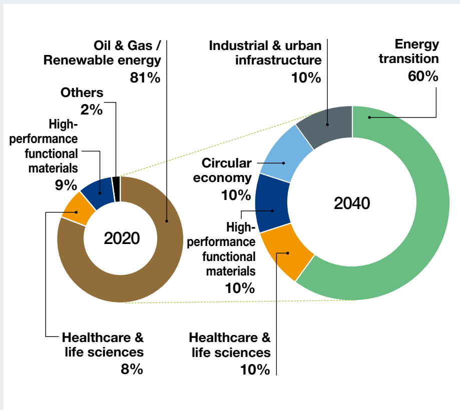
01 Business area transformation

Depending on the timeline, the Group will be expanding into five areas that include core business, growth business, and future business which will be developed into pillars of business.

Path to business area expansion



Envisioned breakdown of sales



02 Business model transformation

A sustainable EPC business model will be pursued, along with a diversified revenue structure from expansion of non-EPC models.

Transformation of EPC business model

Applying digital technologies to make bidding more competitive, increase the likelihood of orders, and reduce project execution risks

2030

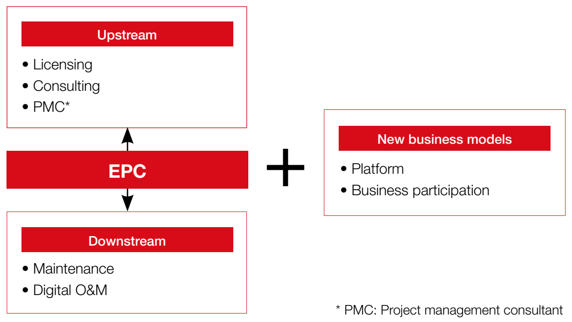
Complete projects twice as fast with one-third the staff hours and improve EPC execution capabilities, as envisioned in the IT Grand Plan 2030.

2040

Project the potential of new business models and the emergence of new forms of EPC.

Business model diversification

Expanding EPC-based business models upstream and downstream while establishing new business models



* PMC: Project management consultant

03 Organizational transformation

Regional management will be strengthened and a culture of innovation fostered.

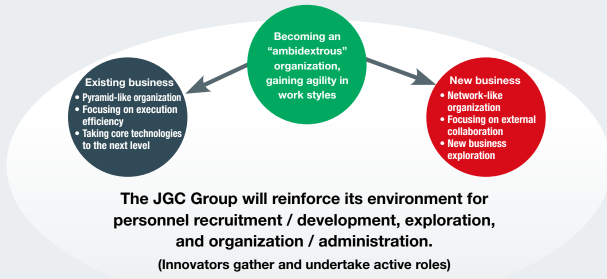
Stronger framework for regional management

Complementing existing project management from the head office in Japan, we are strengthening our regional management framework, aimed at promptly proposing and executing solutions in an attentive, locally produced and consumed arrangement for local clients in growth markets.

For an innovative group of engineers creating and pioneering new technologies and business

More vibrant culture of innovation

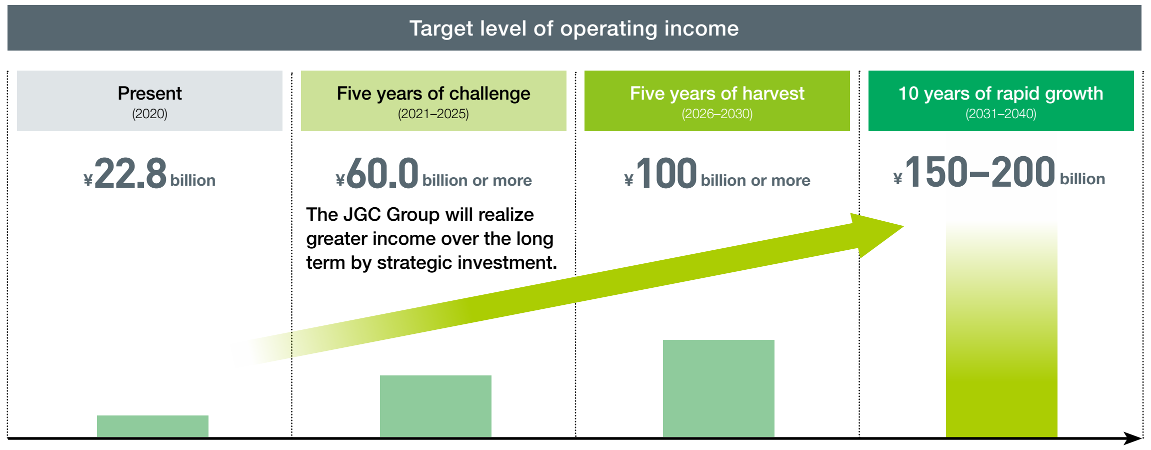
In new and existing operations, a corporate culture will be fostered for continuous innovation in technical commercialization and business model development, as needed for transformation in business areas and models. We will seek an "ambidextrous" organization with diverse work styles.



The JGC Group will reinforce its environment for personnel recruitment / development, exploration, and organization / administration.
(Innovators gather and undertake active roles)

Target level of operating income*

These three facets of transformation will support us in reaching ¥150–200 billion of income in 2040. Strategic investments to be made over the long term.



* Adjusted operating income: Operating income plus interest and dividend income and share of profit of entities accounted for using equity method earned in each business area

For details on the long-term management vision, please visit the JGC Group website.
https://www.jgc.com/en/ir/management/mt-management-plan.html

Overview of BSP 2025, the Group's Medium-Term Business Plan

Last fiscal year began the first five-year stage (fiscal 2021–2025) on the path to the 2040 Vision, positioned as five years of challenge. Our medium-term business plan for this initial period is "Building a Sustainable Planetary Infrastructure 2025 (BSP 2025)." Three key strategies established in BSP 2025 form the basis for an array of ongoing business and investment strategies.

Three key strategies

01 Transformation of EPC operations

Increase competitiveness and profitability in mega-sized EPC projects	Take on EPC growth markets and segments
Improve project gross profit ratios • Refine risk management • Improve project negotiations **Improve competitiveness in securing orders** • Develop and execute joint venture strategies • Develop and apply digital technologies • Optimize construction methods	**Expanding into growth markets** • Actively expand business in the Asia region **Expanding into growth segments** • LNG receiving terminals, Gas-fired power • Solar power, Biomass power • Pharmaceuticals / hospitals • Chemicals

02 Expansion of manufacturing business for high-performance functional materials

Offer more product lineups in existing business for increased revenue	Catalysts for chemical refineries, original chemical catalysts, materials for semiconductor / high-speed telecom applications, products used in semiconductor manufacturing equipment, etc.
Expand sales of strategic products	New chemical catalysts and fine chemicals products, high thermal conductivity silicon nitride substrates, etc.
Explore and develop next-generation business	Catalysts for carbon recycling and chemical recycling, materials for high-speed communications, materials used in the life sciences, all-solid-state battery, materials for bone regeneration

03 Establishment of future engines of growth

Among the business areas defined in the 2040 Vision, the following are especially promising in this regard. Operations established in these new areas will be developed into profitable future pillars of business.

Business areas	Growth engines	Business areas	Growth engines
Energy transition	• Carbon management • Offshore wind power • Hydrogen / fuel ammonia • Small modular reactors (SMRs) • Smart O&M	High-performance functional materials	• Catalysts for carbon recycling, chemical recycling • Bone regeneration materials / OCP, etc.
		Circular economy	• Chemical recycling of plastic and fiber waste • Sustainable aviation fuel (SAF)
Healthcare & life sciences	• Smart hospitals • Smart factories • Digital healthcare	Industrial & urban infrastructure	• Water treatment • Railways

Financial targets

Through steady progress in implementing the three key strategies, we are targeting net sales of ¥800 billion in fiscal 2025, with operating income of ¥60 billion, profit of ¥45 billion, and ROE of 10%. Sales targets from various standpoints in the context of these key strategies are as follows.

	FY2025 (Targets)
Net sales	¥800 billion
Operating income	¥60 billion
Net income attributable to owners of the parent	¥45 billion
ROE	10%

Sales targets by key strategy

Key strategies	Details	Net sales target for fiscal 2025 (Billion yen)
Transformation of EPC operations	**Mega-sized overseas EPC projects** LNG, petroleum refining, etc.	350.0
	EPC growth markets and segments LNG receiving terminals, gas-fired power Renewable energy, chemicals Healthcare & life sciences, etc.	300.0
Expansion of manufacturing business for high-performance functional materials	**Main conventional products**	50.0
	Strategic products	10.0
Establishment of future engines of growth	**Growth engines** Offshore wind power Chemical recycling "Blue" hydrogen / fuel ammonia, etc.	50.0
Other	**Maintenance**, etc.	40.0
Total		800.0

Policies supporting the three key strategies

Both our investment strategy and policies on our talent and organization are supporting us in implementing the three key strategies.

Investment strategy

A total of ¥200 billion in investment is planned during BSP 2025.

DX / Business development / M&As / Commercial demonstrations / Production facilities / R&D

Transformation of EPC operations	Expansion of manufacturing business for high-performance functional materials	Establishment of future engines of growth
¥70 billion	¥50 billion	¥80 billion
• EPC DX • Acquire business capabilities in the Asia region • Pharmaceutical engineering technologies, etc.	• Investment to develop new product technologies (such as for life science materials) • Facility investment related to high thermal conductivity silicon nitride substrates, etc.	• Carbon management • Offshore wind power • Hydrogen / fuel ammonia • Chemical recycling, etc.

Policies on our talent and organization

- Realign human resources and expand with talent in new occupational categories
- Establish specialized units for new business
- Foster vibrant culture of innovation, to enable future operations

For details on the medium-term business plan, please visit the JGC Group website.
https://www.jgc.com/en/ir/management/mt-management-plan.html

Correlation of Strategies, Strengths, Materiality, and Management Resources

Under key strategies of the medium-term business plan, we apply our proven strengths to pursue both revenue growth and planetary health. In both pursuits, we are mindful of materiality issues that we consider relevant to the Group's purpose and vision.

	Materiality		Related SDGs	Recognized Social Issues	Materiality Icon
E	Societies in harmony with environment			• Reducing the environmental impact of fossil energy • Promoting use of a greater share of renewable energy • Protecting ecosystems, maintaining biodiversity • Promoting development of products and technologies that help curb global warming	
S	Materiality to address through business activities	Working with local communities around the world		• Contributing to economic and industrial development in emerging markets • Creating employment in emerging markets • Supporting technology transfer and human resource development in emerging markets	
		Human rights, employee motivation		• Promoting workplace diversity • Promoting female hiring and strengthening skill-building • Respecting human rights in all business activities	
	Materiality to achieve as a result of business activities	Energy access		• Meeting greater global energy demand • Promoting wider use of renewable energy that contributes to sustainable growth • Enhancing productivity through greater global energy efficiency	
		Quality of life		• Responding to aging social and industrial infrastructure • Promoting development of social and industrial infrastructure in emerging markets • Improving global medical standards • Making life more convenient and comfortable	
G	Corporate governance, risks management			• Strengthening corporate governance • Ensuring regulatory compliance in business activities • Responding appropriately to corporate and business risk	

2040 Vision

BSP 2025: Key Strategies

01	Transformation of EPC operations	• Increase competitiveness and profitability in mega-sized EPC projects • Take on EPC growth markets and segments
02	Expansion of manufacturing business for high-performance functional materials	• Offer more product lineups in existing business for increased revenue • Expand sales of strategic products • Explore and develop next-generation business
03	Establishment of future engines of growth	• Offshore wind power • "Blue" hydrogen / fuel ammonia • Chemical recycling, etc.

Management resources for sustainable growth

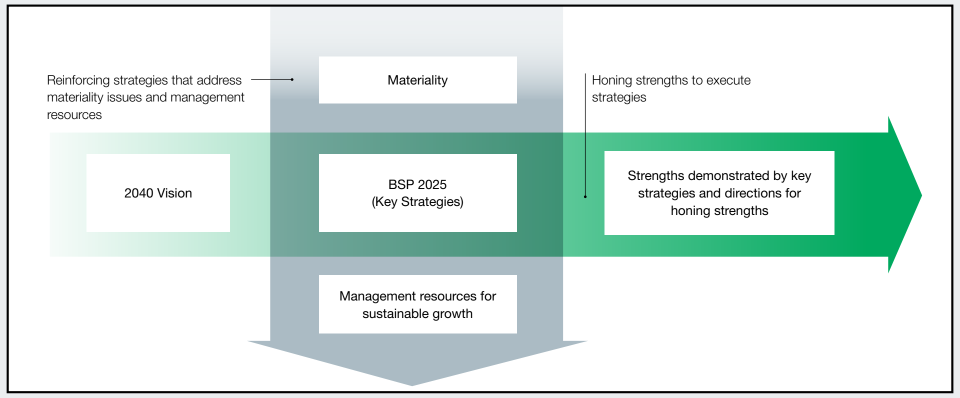
Sustainability management

- Addressing climate change
- Human rights compliance
- Occupational health and safety

- Human capital initiatives
- IP / Intangible asset initiatives
- Quality management system
- Corporate governance
  - Risk management
  - Compliance
- Stakeholder engagement
- Reinforcing financial base

Reinforcing strategies that address materiality issues and management resources

Overview of correlation diagram



Technical Expertise	Risk Management	Management Capabilities
◎ • R&D for greater competitiveness and profitability in existing segments • R&D to expand new segments; acquisition of technology through M&As and collaboration and so on	◎ • Adopting more sophisticated project risk management • Applying digital transformation in EPC business and so on	◎ • Honing project management capabilities • Advanced project management system (EPC DX) • Continuous training of project team members and so on
◎ • R&D for greater competitiveness and profitability in existing segments • R&D for new product development; acquisition of technology through M&As, collaboration and so on	○ • Reinforcing production systems to respond to changes in market environments and so on	○
○ • R&D to create new business; acquisition of technology through M&As, collaboration 1. Hydrogen / fuel ammonia 2. Circular economy 3. Sustainable aviation fuel (SAF) 4. Small modular reactors (SMRs) and so on	○ • Strengthening risk management in new segments and business Addressing anticipated risks 1. Market environment risks 2. Capacity risks 3. Technological risks 4. Competitive risks 5. Investment risks and so on	◎ • Applying management capabilities in new business Leveraging these capabilities and taking the lead with diverse partners in early commercialization and so on

Honing strengths to execute strategies

Vision

World trends in 2040 anticipated by the JGC Group

- Greater global primary energy demand
- Higher global average temperature
- Greater supply of renewable energy
- Greater amount of waste generated
- Increase in non-biodegradable plastic waste
- Increased urban population, as economic growth draws more people to cities
- Greater medical needs in emerging economies and elsewhere

2040 social issue targets set by the JGC Group

- Pursuing both a stable energy supply and decarbonization
- Reducing the environmental impact of resource consumption
- Building and maintaining vital infrastructure and services

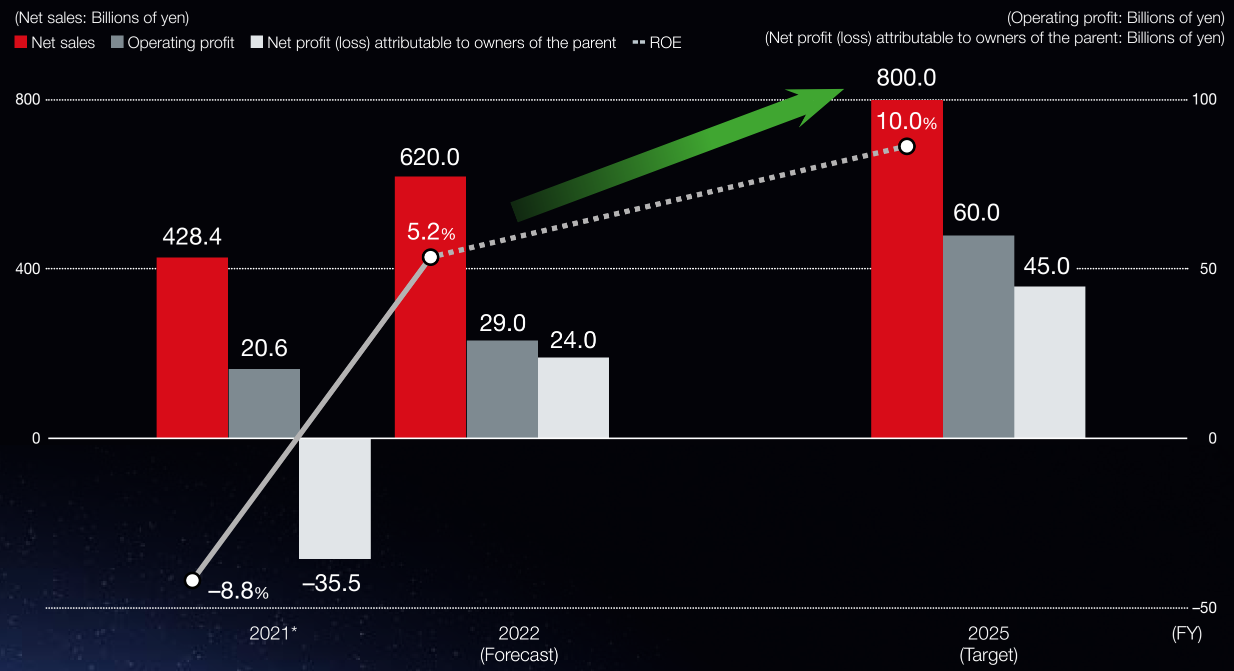
◎ : Strategies in which Group strengths are especially relevant
○ : Strategies in which Group strengths are relevant

Progress in BSP 2025, the Medium-Term Business Plan

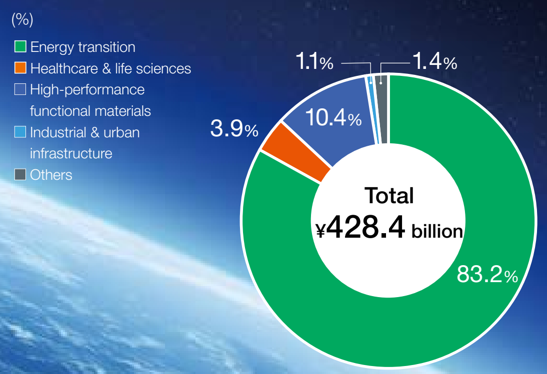
Fiscal 2021 saw steady results in the three key BSP 2025 strategies of transforming EPC operations, expanding manufacturing business for high-performance functional materials, and establishing future engines of growth. Progress was also made in supporting policies focused on investment and the Group's talent and organization.

Progress toward financial targets

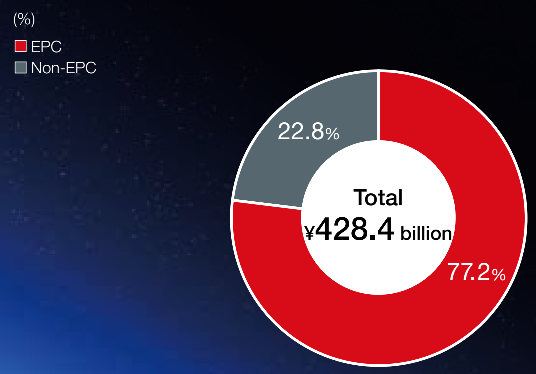
* Year of recording an extraordinary loss in the Ichthys LNG project, completed in 2018



Net sales by business area (Fiscal 2021)



Net sales by business model (Fiscal 2021)



Key Strategy 01 Transformation of EPC operations

	Accelerate transformation of overseas EPC operations	• Mr. Farhan Mujib appointed president of JGC Corporation on Jan. 1, 2022
Increase competitiveness and profitability in mega-sized EPC projects	Accelerate digital transformation of EPC	• Medium-term IT strategy formulated; integrated digital execution of EPC services in overseas projects sought from 2023 • Advanced work packaging (AWP) introduced in a refinery upgrading project in Iraq
Take on EPC growth markets and segments	Strengthen framework for domestic pharmaceutical business	• IHI Plant Services Corporation's pharmaceutical plant EPC business acquired • Pursuit of further business expansion in the domestic pharmaceutical business • Record orders received in this segment in fiscal 2021
	Establish regional headquarters for Asian market	• JGC Asia Pacific established in Singapore as a regional headquarters • Receipt of orders for a mega solar plant in the Philippines, an LNG receiving terminal in Taiwan, and a contact lens plant in Malaysia, among others

Key Strategy 02 Expansion of manufacturing business for high-performance functional materials

Offer more product lineups in existing business for increased revenue	Respond to higher semiconductor demand	• Fine chemicals: Expanded sales of silica sol in hard disk polishing applications • Fine ceramics: Record orders and sales of structural ceramics for semiconductor production applications
	Expand product sales overseas Develop and sell catalysts supporting decarbonization	• Catalysts: Increased overseas orders of FCC catalysts • Catalysts: New amorphous silica-alumina material developed; expanded sales sought from fiscal 2022 • Catalysts: Low-temperature denitration catalysts developed; engaged in market expansion for denitration in waste incinerators and biomass power generation
Expand sales of strategic products	Expand production facilities for silicon nitride substrates	• Fine ceramics: Full-scale production of high thermal conductivity silicon nitride substrates underway since fiscal 2021 • Fine ceramics: Continued production line investment and R&D for higher performance
Explore and develop next-generation business	Expand applications to life science materials	• Fine chemicals: Market exploration and R&D underway to expand life science materials applications, including antibacterial and dental materials; Life Science Group established at the R&D Center

Key Strategy 03 Establishment of future engines of growth

Clean energy	Green chemical production	• Joint project with Asahi Kasei Corporation underway demonstrating production of commercialization
	Small modular reactors (SMRs)	• Investment made in U.S.-based NuScale Power, LLC, the company closest to commercialization
	Fuel ammonia	• Alliance formed with Toyo Engineering Corporation for EPC fuel ammonia plant business; license agreement concluded with KBR Inc. for an ammonia production process
Circular economy	Sustainable aviation fuel (SAF)	• Joint demonstration of a supply chain model for SAF production from used cooking oil with Revo International Inc. and Cosmo Oil Co., Ltd. • Act For Sky established as a voluntary organization for commercialization, promotion, and expansion of domestically produced SAF

Implementing strategic investment

Results in fiscal 2021

Strategic investment during the BSP 2025 period (planned)

Total of ¥200 billion

Results in fiscal 2021

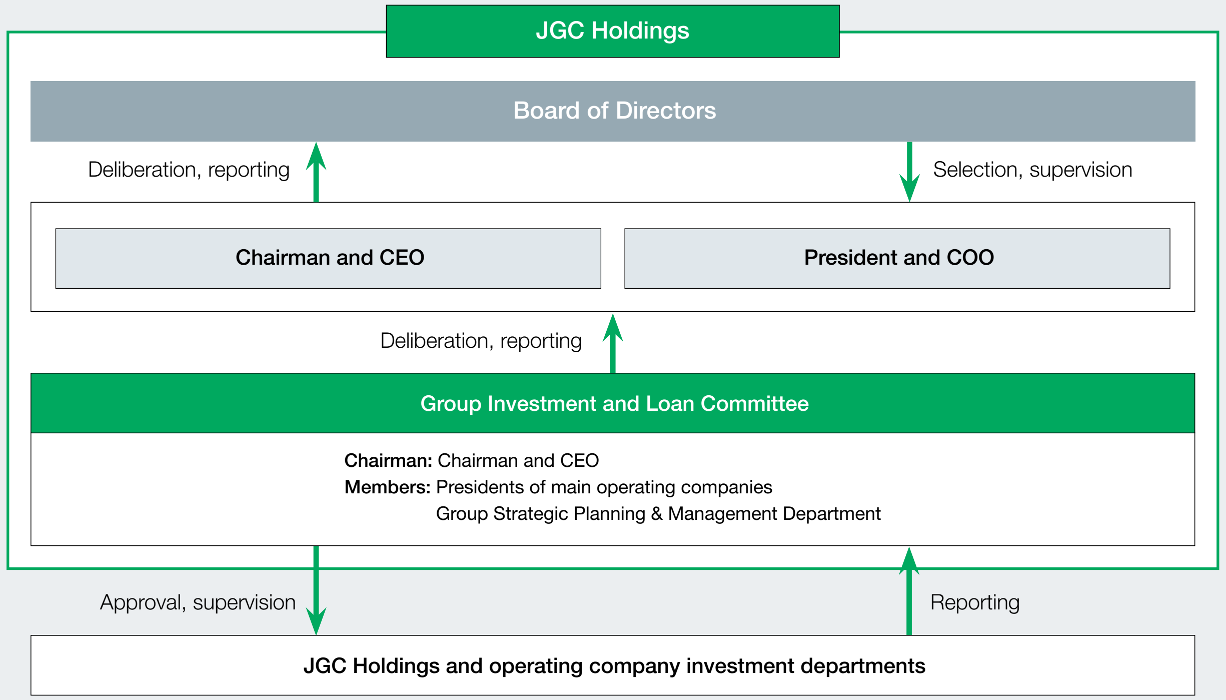
Total of ¥16.0 billion

Main investment

- Investment in digital transformation of EPC
- Investment in U.S.-based NuScale Power, LLC
- Acquisition of IHI Plant Services' pharmaceutical plant EPC business
- Investment in new product development in high-performance functional materials manufacturing
- Investment in high thermal conductivity silicon nitride substrate facilities and others

Strategic investment framework

A framework is in place for reviewing investment in categories such as M&As, strategic business investment, and investment in facilities, R&D, and development of information resources, so that these decisions can be suitably managed accounting for risk and return.



Implementing measures for talent and organization policies

Introducing a new personnel system

- New personnel system encouraging autonomy in current and new areas P. 57 Human Capital Initiatives

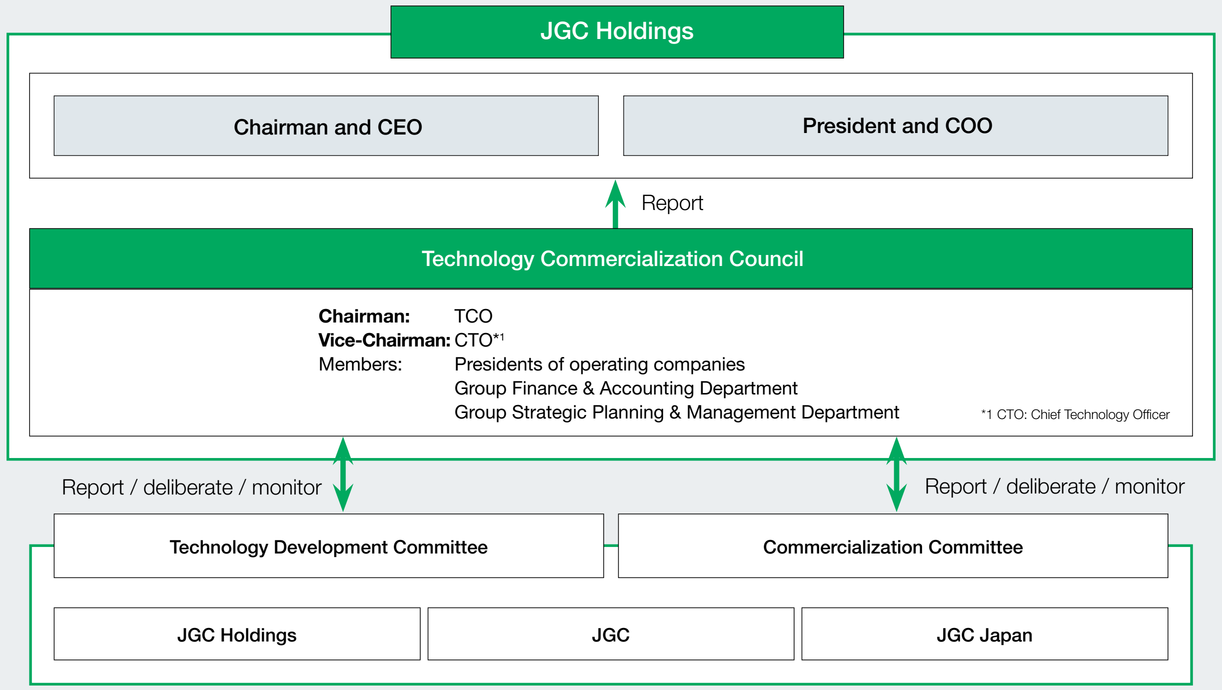
Establishing and consolidating organizations

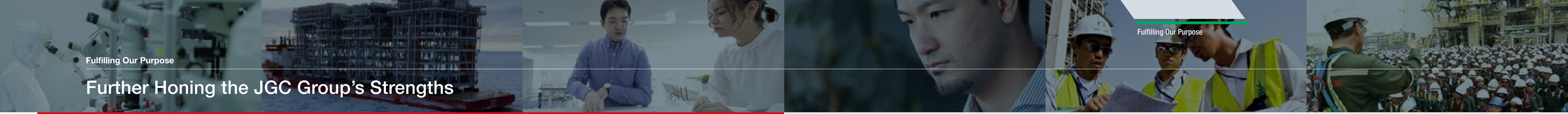
- JGC Mirai Innovation Fund, a corporate venture capital (CVC) fund that JGC Japan established with Global Brain Corporation to strengthen external collaboration
- Sustainable Solutions, an organization serving the sustainability sector outside of Japan, was formed by JGC Corporation to contribute to low-carbon and decarbonization. The organization is charged with investment and other commercial development targeting sustainability-oriented business overseas in areas such as hydrogen / fuel ammonia, SAF, green chemicals, and SMRs while securing and executing EPC projects for related facilities from the stages of feasibility studies and front-end engineering and design.

Establishing Group-wide systems and councils

- System in place to promote formulation and implementation of HR strategies supporting the 2040 Vision across the Group P. 57 Human Capital Initiatives
- To promote technical development and commercialization, a new framework overseeing innovation management processes was established, centered on the Technology Commercialization Council formed in April 2021. For integrated management and promotion of processes from R&D to commercialization, the Council brings together operating company leaders and, as chair, the Technology Commercialization Officer (TCO) to deliberate on technology development strategies, progress management, budgeting, and project approval in the business areas explored by the operating companies.

Mechanisms for exploring and commercializing new technologies

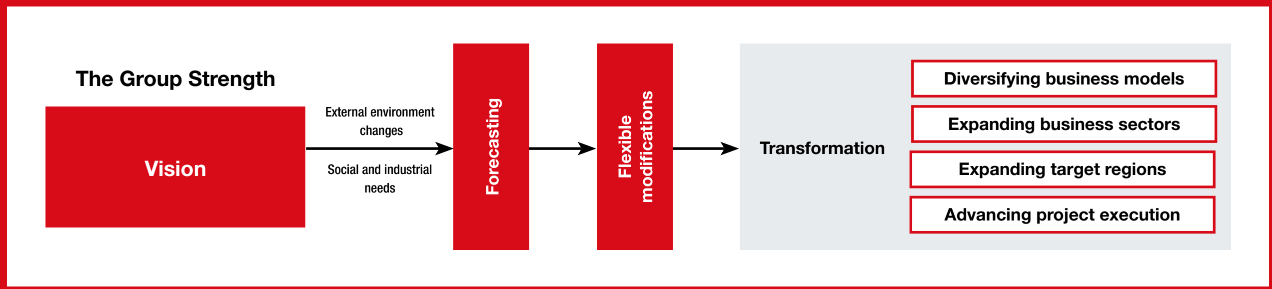




Vision

Foresight originally led to the founding of the JGC Group, in expectation of changes in domestic energy demand and supply. Since then, the Group has continued to grow by constantly anticipating external environment changes and social and industrial needs to expand our segments and global business area, diversify business models, and innovate project execution.

This Group strength of foresight suggests what the future may hold and enables agile corporate transformation as we discern occasional changes and adjust expectations accordingly. It will be increasingly valuable in the turbulent modern market environment and will drive sustained growth in times to come.



2040 Vision, a crystallization of foresight

The 2040 Vision builds on foresight that we have cultivated as a JGC Group strength. Anticipating how the world will be in 2040, the document identifies issues to address and roles to fulfill in view of environmental changes expected from various perspectives, including that of the energy sector. To this end, the Group is taking on multifaceted transformation.

Expectations in the 2040 Vision

Future described in the 2040 Vision, issues addressed by the JGC Group

- Under a scenario based on current policies, global primary energy demand is set to expand from 14.4 billion toe (ton of oil equivalent) in 2019 to 17.1 billion toe in 2040.
  Source: *World Energy Outlook 2020*, International Energy Agency (IEA)
- Global average temperature is expected to rise 1.5°C between 2030 and 2050, at the current rate of warming.
- In renewable energy, the current supply of 900 million toe is expected to increase to 3.3 billion toe by 2040.

Pursuing both a stable energy supply and decarbonization

- In waste generated, the 2016 level of 2 billion tons is expected to reach 3.4 billion tons by 2050.
- 12% of this total will be plastic waste that is not biodegradable.

Reducing environmental impact of resource consumption

- Cities are expected to swell from 50% of the total population in 2018 to 66% in 2050 as economic growth drives urbanization.
- Development of medical infrastructure will be in demand in emerging economies and elsewhere, and needs will increase for higher standards of treatment and specialized medicine.

Building and maintaining vital infrastructure and services

Realizing transformation through anticipating social / industrial needs

Diversifying business models

Anticipating social / industrial needs to expand business models by developing and applying Group technologies and spinning off related businesses while remaining centered on engineering

Examples

Expansion into catalyst production business
Spun off production of key oil refining catalysts to develop this business

Expansion into fine chemicals manufacturing business
Expanded business by applying nanotechnologies from catalyst production

Expansion into energy / environmental consulting business
Launched in anticipation of widespread environmental awareness and energy diversification; applies engineering technologies

Chemical and petrochemical catalysts

Silica sol as a polishing abrasive (fine chemicals)

Expanding business sectors

Anticipating social / industrial needs to expand into growth segments where Group technologies and expertise are an advantage

Examples

From oil refining to petrochemicals
Expansion in anticipation of domestic petrochemical industrialization, applying refining technologies

Seizing opportunities in growth segments
Constant exploration of promising segments and areas where our strengths can be leveraged; entering new fields ahead of the needs of our times
Examples include non-ferrous refining, hospitals and pharmaceutical plants, nuclear power, LNG, renewable energy, and CCS

LNG plant (Indonesia)

Nickel smelting (Philippines)

Expanding target regions

Monitoring and anticipating regional trends in resource / energy demand and economic growth to expand into promising regions

Examples

Global expansion building on domestic business
Expanded into regions with active oil development such as South America and North Africa in the 1960s, applying domestic refining expertise

Anticipation of the natural gas era
Expanded into the leading markets for new resource development such as the Middle and Near East and North America in the 2000s, anticipating wider environmental awareness and a shift from oil to natural gas

Algerian refinery project, 1960s

Petrochemical plants (North America)

Advancing project execution

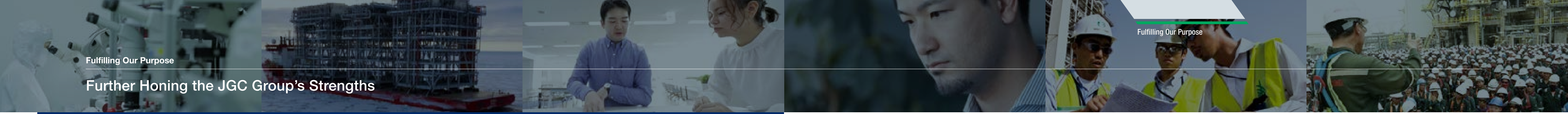
Actively streamlining each EPC process and adopting more advanced project / risk management amid larger projects to pursue more valuable Total engineering business

Examples

Globalizing project resources
Shifting from a project execution model centered on domestic resources to one centered on local resources, both to reduce forex risk and in anticipation of local procurement / construction benefits

Establishing scientific project management methods
Developing an original project management system in which qualitative / quantitative project information is visualized, managed, and applied; increasingly adapted to digitalization, the system is useful in latter project stages and in anticipating risks

Construction work by global resources



Technical Expertise

Among JGC Group strengths, technical expertise supports both EPC and functional materials manufacturing. In each technical field—techniques and technologies for plant or facility design, project execution, and functional materials manufacturing—we are further honing technical expertise to expand the five business areas identified in the long-term management vision, both to enhance competitiveness and profitability in existing segments and to create new business.

The Group Strength — Direction of refinement, application

- **Technical Expertise**
  - Continuous refinements → R&D for greater competitiveness and profitability in existing segments
  - Discontinuous refinements → R&D and acquisition of technology for creating new business

Technical expertise of the JGC Group

	Main Sectors	Design and Core Technologies
Plant / facility design	Natural gas, refinery, petrochemical, chemical, clean energy, nuclear energy, non-ferrous metal smelting, pharmaceuticals, and healthcare	• Process engineering • Detailed design engineering, such as mechanical (including piping and equipment), civil / structural, electrical / instrumentation and control, structural, IT, etc.
Project execution		• Project management (managing costs, schedules, resources, and other elements) P. 45 Management Capabilities • Modular construction and other construction methods
Functional materials manufacturing	Catalysts (petroleum refining, chemical, and environmental conservation), fine chemicals, and fine ceramics	• Nanoparticle preparation • Nanoparticle alignment control • Nano pore structure control • Macro structure control

Technical integration

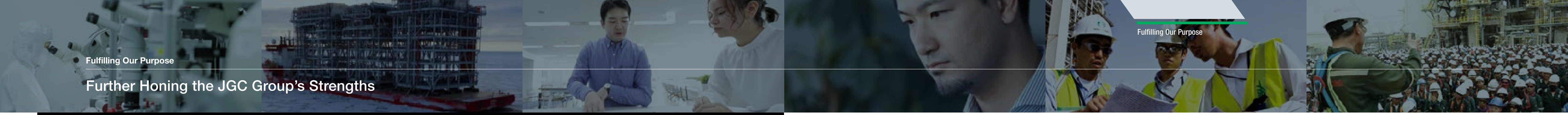
Of the facilities provided by the JGC Group, energy and chemical plants operating under constant high temperature and pressure form an organic whole that integrates many technologies in complex ways. The ability to integrate these technologies and bring facilities to life sets the Group's technical expertise apart.

R&D for greater competitiveness and profitability in existing segments

	Main Technologies
Plant / facility design	• Electrification development to reduce LNG plant emissions • Various development for CCS • Energy management solution development for factories and industrial parks • New modality design development for pharmaceutical manufacturing
Project execution	• Promotion of digital transformation of the project management system • Adoption of more advanced modular construction • Deployment of 3D printers for construction work  Modules for a current project
Functional materials manufacturing	• Development of low-temperature denitration catalysts • High thermal conductivity silicon nitride substrates with higher performance • R&D on life science materials • Agreement with Showa Denko Materials Co., Ltd. to acquire volume production and materials expertise; new company established

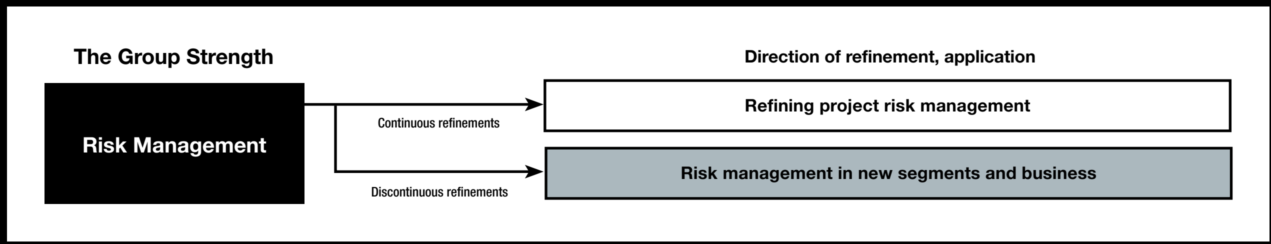
R&D and acquisition of technology for creating new business

	Main Sectors
Hydrogen / fuel ammonia	• Ammonia production process development • Catalyst development for ammonia production • Alliance with Toyo Engineering Corporation • Licensing a process of U.S.-based KBR Inc.  Ammonia synthesis pilot project facility
Circular economy: chemical recycling	• Collaboration with EBARA Environmental Plant Co., Ltd., UBE Corporation, and Showa Denko K.K. on applying the Ebara Ube Process
Sustainable aviation fuel (SAF)	• Collaboration with Japan Airlines and All Nippon Airways, Revo International Inc., Cosmo Oil Co., Ltd., Kansai Airports, and others P. 45 Management Capabilities
Small modular reactors (SMRs)	• Capital participation in U.S.-based NuScale Power, LLC  Rendering of the first proposed SMR reactor site



Risk Management

The JGC Group considers effective risk management essential to ensuring stable project revenue, expanding into new segments, and creating new business. As we continue to hone the project risk management we have forged to date, we will also strengthen risk management in new fields for EPC and other new business in the five-business areas set for expansion in the 2040 Vision.



Project risk management

With projects at larger scales, changes in individual project profitability may greatly affect overall corporate profit or loss.

We recognize that suitably addressing risks is essential in managing projects, and accordingly, project managers and all other team members follow a risk management flow applying our original project management system and methods to respond to a variety of project risks for each role fulfilled and in each phase. Especially in large-scale projects, risks and their management are carefully discussed and considered from the estimate stage and over the course of executing projects.

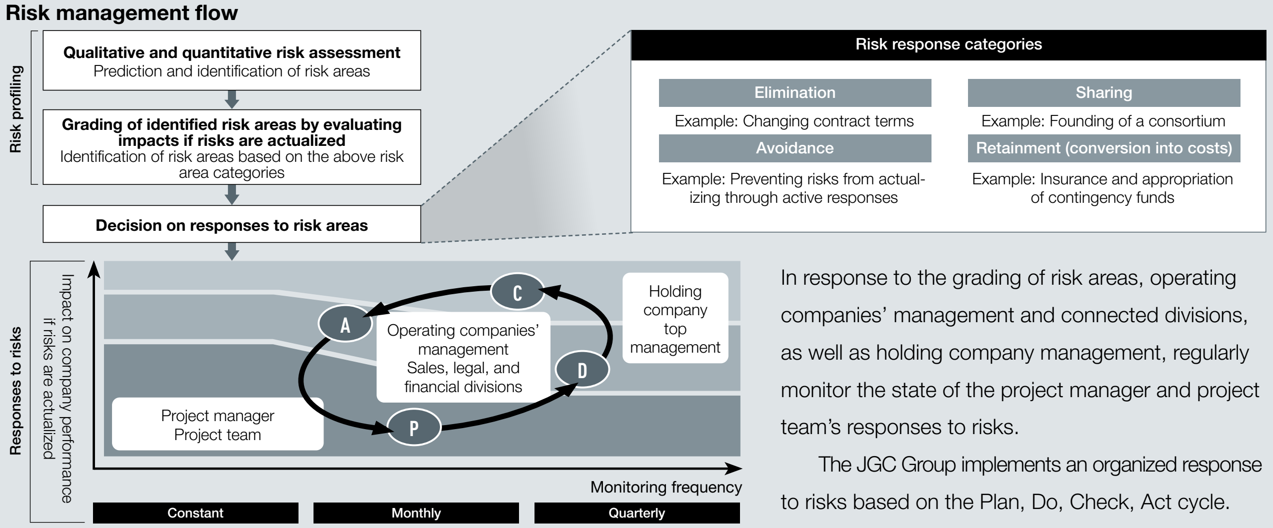
Project risks

Technical Risks	Project Implementation Risks	Contract Terms and Other Consequent Risks
Risks that must be grasped from the perspective of technical specifications and scope of work **E.g., disagreement with design requirements, new processes**	Risks that must be understood from the perspective of project implementation **E.g., securing of internal, vendor, and subcontractor resources**	Risks that must be grasped from the perspective of contract terms and project backgrounds **E.g., exchange rates, taxations, political instability, excessive requirements of performance, and delivery guarantee**

Original project management system

Engineering management system	Procurement management system	Construction management system
Project execution management system (management of progress, schedules, cost, etc.)		

Risk management flow



In response to the grading of risk areas, operating companies' management and connected divisions, as well as holding company management, regularly monitor the state of the project manager and project team's responses to risks.

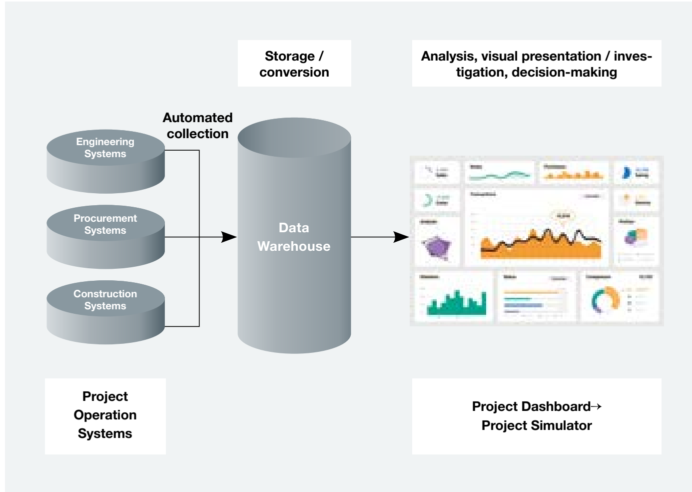
The JGC Group implements an organized response to risks based on the Plan, Do, Check, Act cycle.

Refining project risk management

Applying digital transformation in EPC business

Greater competitiveness and profitability is sought in large EPC projects in particular, and to this end, we are strongly promoting EPC DX to visualize project execution and enhance risk forecast accuracy as well as enable early risk detection and containment. We are working to implement an EPC execution platform in the near future that applies digital technology for centralized control of EMS, PMS, CMS, and other conventional project management systems.

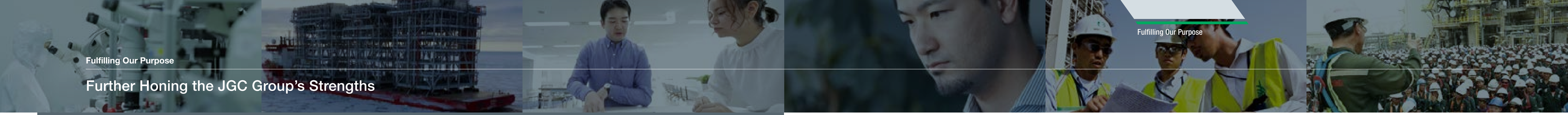
A new medium-term IT strategy was formulated in August 2021 in support of IT Grand Plan 2030, and specific priority development programs are being introduced and reviewed. Construction digitalization systems, design platform systems, and other aspects of this have been deployed for a current Iraqi refinery upgrading project, and the Group plans for 2023 to be a landmark first year for more widespread DX in EPC operations, aiming to apply several digital technologies in all domestic and overseas projects.



Risk management in new fields and business

In engaging in the five new business areas in the 2040 Vision, we recognize the importance of reinforcing our responsiveness to an array of risks different from those in EPC operations. Determining these risks and taking preventative measures will enable us to avoid or contain risks in new segments and new business, as we seize revenue opportunities.

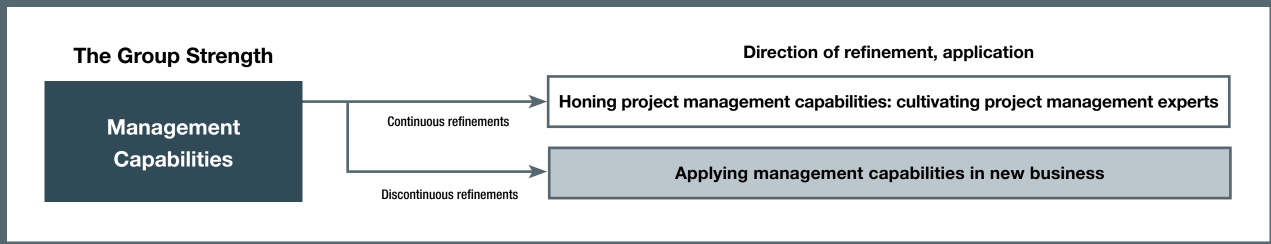
Potential Risks	Measures to Reinforce Risk Management
Market environment risks	Anticipate changes in the macro environment and each segment; regularly review and revise policies and strategies
Capacity risks	Realign human resources, expand mid-career recruitment, and engage in M&As and partnerships
Technological risks	In fields that require unfamiliar technical expertise, reduce technological risks by securing experts (through mid-career recruitment) and engaging in collaboration and M&As
Competitiveness risks	In new segments with nascent markets, take the initiative in building supply chains to gain a competitive edge P. 45 Management Capabilities
Investment risks	Establish a multilayered decision-making process, make strategic investments based on investment criteria and risk assessment, and determine criteria for periodic review and withdrawal



Management Capabilities

Management Capabilities

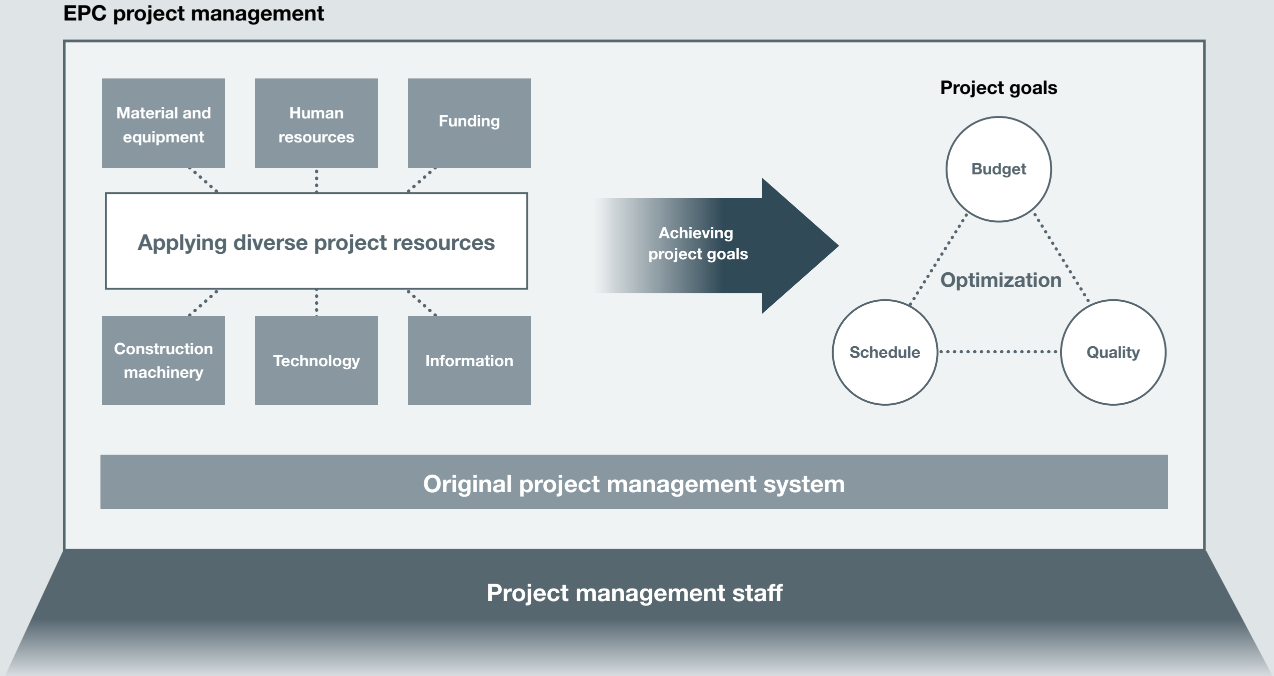
Management capabilities—for project management in particular—are a core competency of the JGC Group as an EPC-focused enterprise. We continue to hone EPC project management capabilities for greater competitiveness and profitability in large EPC projects while at the same time applying and reinforcing management capabilities to expand EPC operations into growth markets and segments and create new business.



EPC project management capabilities

Project management that the JGC Group has established through EPC operations can be defined as efficiently managing diverse project resources with an original project management system to complete plants and facilities on time, on budget, and at the level of quality required while ensuring revenue. What supports this project management is project human resources, with project managers having ultimate authority over the project.

EPC project management

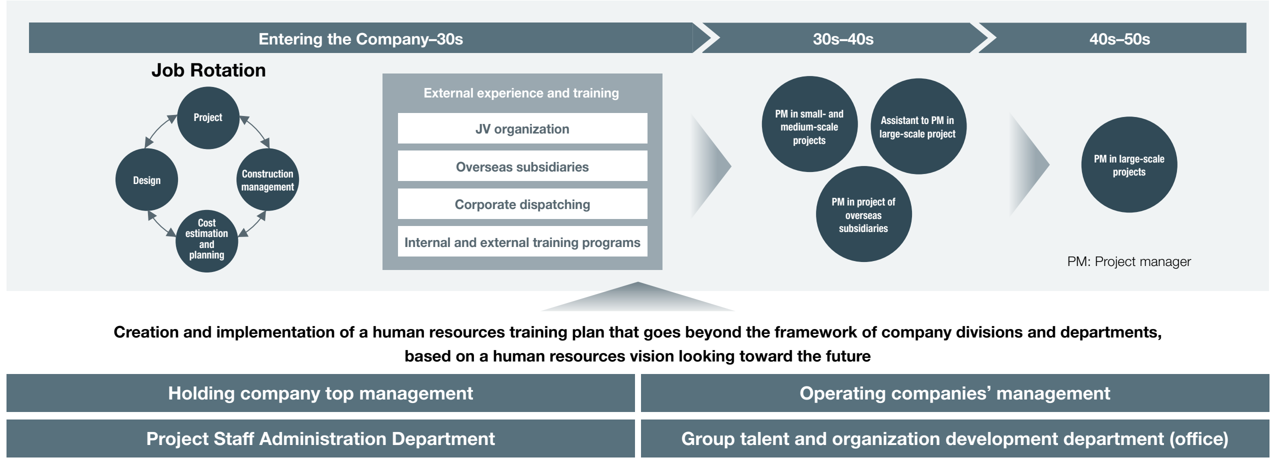


Honing project management capabilities: cultivating project management experts

In honing EPC project management capabilities, the JGC Group recognizes the importance of adopting a more advanced project management system through promotion of DX (Risk Management, p.43) and providing continuous training for project managers and other project management experts. Continuous training of project manager candidates is monitored to provide extensive professional experience over the medium to long term.

P. 47 Human Resources Embodying Group Strengths

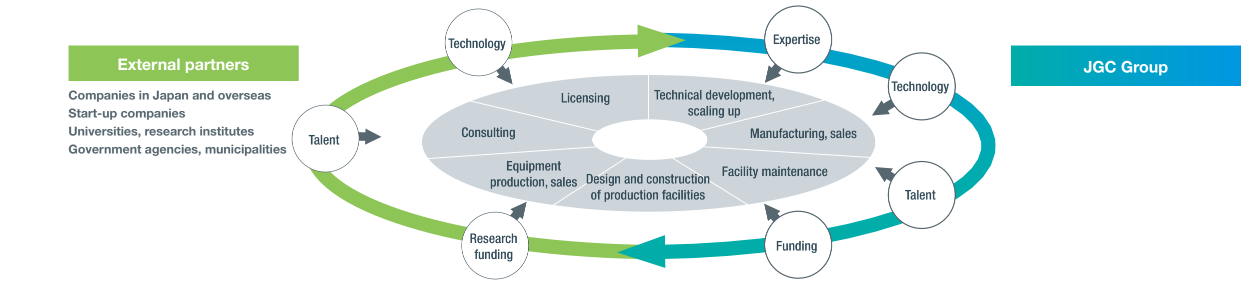
Project manager career path



Applying management capabilities in new business

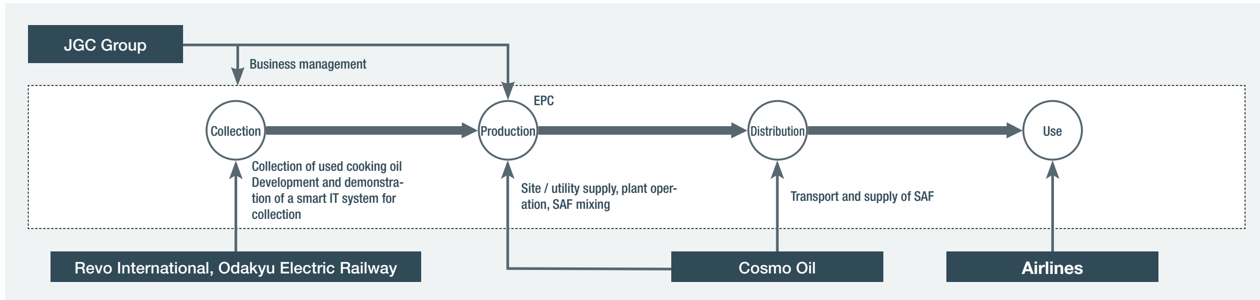
The Group is actively engaged in building value chains for new business that are built on sustainable core technologies. These value chains will apply existing, independently developed expertise and technologies of the JGC Group, but we also anticipate collaboration with enterprises that maintain their own advanced technologies and open innovation with universities. Rapid business development will also apply collaboration with government agencies, local government, and other corporations. In this way, we will pioneer new business by applying management capabilities that are a Group forte and taking the lead with diverse partners.

P. 47 Human Resources Embodying Group Strengths



Building a supply chain for commercial SAF production

Efforts aimed at establishing a domestic value chain for sustainable aviation fuel (SAF) made from used cooking oil are underway by the JGC Group, Revo International Inc., Cosmo Oil Co., Ltd., and Odakyu Electric Railway Co., Ltd. Here, the Group is issuing proposals and providing EPC services for efficient, economical production facilities and overall supply chain optimization by leveraging extensive engineering expertise and project management capabilities built up from knowledge and experience in energy and environmental areas.



Human Resources Embodying Group Strengths

Meet two members who demonstrate strengths of the JGC Group

Takeshi Nishimura

(JGC Corporation)

Civil engineering major
Joined JGC in 1997
Initially involved in civil engineering department, later moved to a project department in 2009. Having served as both an engineering and project manager in FLNG projects, he is currently involved in project management for a new FLNG project.

Q1 In executing projects, what is the role of project management, in your view?

The role of project management, as I see it, is to steadily implement PDCA cycles with the entire project in mind. This extends from planning (order strategies, project execution policies, and so on) to actual project execution, regular reviews, and steps to minimize risk of deviation from the plan. Having an environment in place where people can carefully implement PDCA cycles for each of these activities—that's also a role of project management. To this end, key aspects of project management are working closely with a variety of project partners and monitoring progress to know if things have gotten off track or if any factors may cause this, and if so, negotiating and bringing everyone together to rectify it.

Q2 What sets project management by the JGC Group apart?

With ample human resources who are firmly grounded in technical expertise for design and operations, I think the Group's strength is that we can make decisions quickly, from identifying technical issues to formulating policies. Then there's our outstanding project budget management, which project teams enjoy a high degree of freedom. At their discretion, and without missing opportunities, they can quickly take steps to avoid risks. Freedom to decide keeps the team members highly motivated, and ultimately, this provides an environment that fosters human resources capable of independent project management.

Q3 What risks in particular have emerged in projects? How has skillful project management helped overcome them?

In an FLNG project, we worked with a shipyard that builds hulls for LNG facilities, but our different corporate cultures led to some friction. There was a situation that the shipyard, under control of a shipbuilder, refused to temporarily store some materials and equipment that had arrived early. Additionally, this worsened when the project was paused while the client dealt with cash flow problems. To resolve this situation, we arranged for temporary storage off-site, which was paid for by additional contract funds from further negotiation with the client. It turned out to be a successful case of leading discussions so that everyone involved did their fair share, with us providing the necessary workers on-site to preserve the material in storage, persuading vendors to keep the materials before shipping was scheduled, and so on.

Q4 Looking ahead, how should project management capabilities be honed?

We're beginning to see new kinds of projects that combine conventional energy plants with elements satisfying low-carbon needs. Project management has traditionally been our strong point, and we must be flexible enough to support these next-generation projects. Energy plants have reached a turning point, as the world looks to a low-carbon future. We should probably also seize the opportunity and actively deploy the innovative automation and other labor-saving technology that other industries in Silicon Valley and elsewhere are involved in and establish management capabilities for these next-gen projects. We do have an environment at JGC where project management experts hone their skills, but the human resources who lead next-gen projects should also be aware of what various industries are working on.

Yuki Nishimura

(JGC Holdings)

Chemical engineering major
Joined JGC in 2006
After beginning in a project department focused on overseas business and working at a refinery construction site in Vietnam, joined the process engineering department. Gained experience in all phases from FS to FEED, EPC, and operations, mainly for refineries. Moved to the Sustainability Co-Creation Department in 2020, where he currently oversees business for sustainable aviation fuel (SAF).

Q1 JGC is currently taking on SAF, which differs from the Group's existing EPC business for plants and presents the challenge of starting from scratch. As JGC pioneers this field, what aspects in particular require special effort?

Any new venture inevitably carries some risk, and the less we know about it, the greater the risk. It has been quite difficult to determine whether it's worth taking risks in commercialization, and beyond this, to lead projects so that all participants feel united as we create the business together. But it's wonderful and rewarding when those who were initially skeptical come around to our point of view.

Q2 What is the key to establishing new business?

In a word, co-creation. Combining own technologies and expertise with that of other companies can accelerate commercialization and make the business as valuable as possible. Forming ideal partnerships is the critical first step before this, and being able to do is essential in leading efforts to build a business.

Q3 What role should the JGC Group fulfill in diverse partnerships?

Coordinating and managing the new business as a whole, and providing the leadership needed in commercialization, in my view. The JGC Group has collaborated as a prime contractor with many partners domestically and overseas to carry out large-scale projects. It's a Group forte to guide partners as we work toward the shared goal of completing a plant. It's the same when establishing new business—I'm sure we can apply these capabilities in co-creation with diverse partners.

Q4 How will the Group show leadership in the SAF project currently underway?

To make domestically produced SAF a reality, we've established a voluntary organization called Act For Sky. Some 16 companies are involved (airlines, oil wholesalers, general trading companies, food companies, and so on) with more expected to join, which shows how the enterprise has brought together buyers, sellers, competitors, and others whose interests don't always align. Getting this business off the ground and cultivating a market for domestic SAF will pave the way for wider adoption and expansion of this product, something all Act For Sky members want to see. This indeed calls for guidance from the JGC Group, and I'd like to demonstrate leadership to this end.

Q5 What goals lie ahead?

The first goal is to ensure that SAF is successfully commercialized. Toward domestic production of SAF by 2025, we'll be working closely with partners to pick up the pace in building a value chain for this business. That's around the time of Expo 2025 in Osaka, which is being promoted as a sustainable event, so I hope to see domestic SAF used for it.

Reinforcing Management Resources for Continuous Growth

Continuous gains in corporate value depend not only on steady results from management strategies in the long-term management vision and medium-term business plan but also on reinforcing management resources that support sustained growth. Here, we describe JGC Group roles for society and the environment, including climate change and human rights initiatives. This chapter also introduces human and intellectual capital initiatives, our corporate governance system, stakeholder engagement, and others.

Sustainability Management

Basic Stance

Sustainability initiatives consistent with the JGC Group's basic policy on sustainability are pursued which also support continuous growth of corporate value.

Basic Sustainability Policy

Creating social value in line with the Group's purpose of "Enhancing planetary health" is intended to make JGC more valuable as a corporate group.

In this commitment, we will actively pursue sustainability in environmental, social, governance, quality, safety, and health initiatives.

Framework for promoting sustainability

The Sustainability Committee formed in December 2021 formulates policies and action plans relevant to sustainability and manages and reports on progress in activities in which the Group operating companies collaborate.

JGC Holdings

Board of Directors

Deliberation, reporting ↑ ↓ Selects, oversees

Chairman and CEO | President and COO

Deliberation, reporting ↑

Sustainability Committee

Chairman: Chairman and CEO
Committee members: President of main operating companies
General Manager of Sustainability Co-Creation Dept.
General Manager of Group Strategic Planning and Management Development Dept.
Administrative Office: Group Strategic Planning and Management Development Dept.

Subcommittee

- CDP response system development
- CO_2 emission reduction planning
- Human rights and development
- Diversity and Inclusion

Deliberation, reporting ↑ ↓ Policy orientation, monitoring

Group Companies

Main activity

Fiscal 2021	1st meeting: Three subcommittees formed: CDP response system development, CO_2 emission reduction planning, and human rights and development.
Fiscal 2022	2nd meeting: Basic policy for human rights and development approved, diversity and inclusion subcommittee formed. 3rd meeting: CO_2 emission reduction plan and CDP response approved.

Positioning as materiality and process to identify materiality

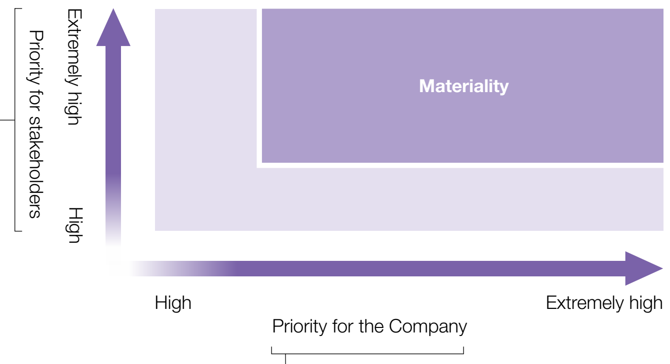
Issues positioned as materiality are viewed as a key element, fundamental in establishing management policies and conducting business. Through business activities, the JGC Group hopes to help resolve social issues and create economic, social, and environmental value.

Six material issues → Management policies / Business activities → Output: Economic value / Social value / Environmental value

Process to identify materiality

Social issues to be addressed by the Group are selected through analysis of GRI guidelines, ISO 26000, SDGs, and other international guidelines and global macrotrends.

Six material issues that take precedence are determined from a comprehensive evaluation of priorities from the standpoint of society, stakeholders, and the Company.



STEP 1 Based on the SDGs and other guidelines, select social issues to consider

STEP 2 Evaluate priority for stakeholders

STEP 3 Evaluate priority for the Company

STEP 4 Material issues are determined from a comprehensive evaluation

Expanded disclosure on sustainability issues

The JGC Group emphasizes dialogue not only with investors, shareholders, clients, and employees but also local communities and other stakeholders. Broad access to information on our sustainability efforts is provided through expanded disclosure on the sustainability section of our corporate website. By recognizing stakeholder expectations and concerns for the JGC Group, we can incorporate measures to address these issues in our business activities and pursue activities supporting sustainability, and we will be considering further steps to improve information disclosure in the future.

Sustainability section of the corporate website

Further details on sustainability initiatives are available on the JGC Group website.
https://www.jgc.com/en/esg-hsse/

Addressing Climate Change

Basic stance

As we work toward a sustainable society, addressing climate change has become a global challenge. The JGC Group has identified "societies in harmony with the environment" as a material issue. Besides taking climate action through environmentally conscious business activities, the Group studies and formulates business strategies accounting for scenario analysis in recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).

Climate change related disclosure

In participating in international frameworks for climate change disclosure, the JGC Group has responded to CDP surveys since 2021 (when the Group received a B rating) and has followed TCFD disclosure guidelines as a supporter.

Framework for governance

The JGC Group responds to climate change issues under the leadership of the representative director and CEO, who is responsible for ensuring that environmental issues are addressed in Group business strategies and targets. One facet of this is assessing and managing climate-related risks and opportunities. Accordingly, the long-term management vision and medium-term business plan announced in May 2021 were established through Board discussions based in part on results of climate change scenario analysis and an assessment of these risks and opportunities. Monitoring of climate change issues is conducted by the Sustainability Committee, an advisory body to the representative director, which formulates policies and action plans related to sustainability, including the Group response to climate change, and deliberates to evaluate and promote relevant action.

P. 51 Sustainability Management

Risk management

The JGC Group is working to reduce and prevent risks from climate change and other factors under a framework that includes the Group Risk Management Committee.

P. 77 Risk Management

Recognition of climate-related risks and opportunities

Main risks

New regulatory risks	Introduction of global carbon pricing may lead to higher equipment and fuel costs, which may affect business costs in the future. We also recognize that introduction of carbon taxes and stricter emission targets in various countries poses a risk of fewer contract opportunities, from a decline in oil & gas projects.
Technology risks	Lower gasoline demand from the spread of electric and fuel cell vehicles poses a risk of fewer contract opportunities for plants in the oil & gas industry. A similar risk is posed by the spread of decarbonized materials and a shift to renewable energy driven by the spread of high-performance storage batteries.
Regulatory risks	Firms bidding on plant construction projects are likely to face stricter information disclosure requirements regarding their climate change measures. This poses a risk of lost opportunities or unsuccessful bids, which may affect the corporate reputation.
Market risks	Lower plant demand in the oil & gas industry may result in fewer contract opportunities. An aversion in financial and capital markets to business related to fossil fuels also poses a risk that projects may not be approved.
Policy and legal risks	Failure to maintain or build on our reputation as an enterprise with the technical expertise to contribute to climate change solutions such as carbon reduction, renewable energy, and hydrogen applications may adversely affect the JGC Group in various ways, such as contract opportunities, financing, or securing human resources.
Acute physical risks	More frequent extreme weather events such as heavy rains, storms, typhoons, and flooding attributed to climate change may physically damage materials, equipment, and JGC Group facilities, adversely affect employees, and delay procurement.
Chronic physical risks	Higher average temperatures may make longer construction periods more common, due to lower labor productivity at construction sites in temperate and tropical regions. Another concern is increased costs for countermeasures and accident compensation, due to higher occupational safety risks. There is also a risk of higher shipping costs from a lack of ports if sea levels rise in coastal areas.

Main opportunities

Products and services	The JGC Group has an extensive record in renewable energy plants such as solar and biomass power plants, which, as the international community shifts toward decarbonization, may increase contract opportunities. The Group has also taken steps to expand orders by establishing an organization dedicated to the promising segment of offshore wind power generation.
	Oil & gas sector applications of CCS, for which the JGC Group has completed multiple projects in Japan and overseas, and CCUS, for which joint development is underway, are expected to expand contract opportunities.
	The JGC Group is engaged in technological development and other initiatives in hydrogen, ammonia, and SMR applications aimed at a decarbonized society. More contract opportunities here can be expected in the future.
	Greater worldwide demand for a circular economy can be expected to drive demand for technologies under development by the JGC Group, which include chemical recycling of plastic waste, recycling of fiber waste, and SAF.

Scenario analysis

Scenario Item	Definition
Target	2040
Analysis reference data	Based on data from the International Energy Agency's (IEA) *World Energy Outlook 2020*
Scenarios	Based on the following outlook scenarios • Physical Climate Scenario (STEPS) • Transition Scenario (SDS)
Target of analysis	Analysis of energy transition, circular economy, and high-performance functional materials areas that are highly relevant to climate change

Business Area	Segment	Business Growth Potential (Scale of 1–6)	
		Physical Climate Scenario (STEPS)	Transition Scenario (SDS)
Energy transition	**Refinery**	→	↘
	LNG	→	↘
	Power generation, nuclear power, new energy	↗	↗
	Hydrogen / fuel ammonia	–	↑
Circular economy	**Plastic waste Chemical recycling**	–	↑
High-performance functional materials	**Catalysts**	↗	↘
	Fine ceramics	↗	↗
Other	**Consulting**	↗	↗

Strategy

P. 29 2040 Vision

The introduction of policies in the transition scenario on matters such as expanded renewable energy use and carbon pricing that supports reduced greenhouse gas (GHG) emissions are viewed by the JGC Group as an opportunity to expand into related business areas by leveraging Group core competencies. Energy transition and circular economy are positioned as axes of climate-related business plan.

Metrics and Targets

The medium-term business plan pledges net-zero Scope 1 and 2 GHG emissions by 2050 from Group business activities at our own sites, besides targeting a 30% reduction in emissions volume per unit of net revenue relative to fiscal 2020 levels by fiscal 2030. Scope 1 and 2 GHG emissions in fiscal 2021 stood at 133,573 tons CO_2 equivalent, an increase of 2% on a net sales basis. Scope 3 emissions in fiscal 2021 stood at 702,873 tons CO_2 equivalent (all figures based on CDP survey responses).

Targets in the commitment to carbon neutrality by 2050

Target	Net-Zero Initiatives
Scope 1+2 **2050** **Net-zero CO_2 emissions**	Develop "JGC Group CO_2 emission reduction plan" in fiscal 2022, and for Scope 1 and 2 reductions, adopt low-carbon / decarbonized practices, such as by reducing energy consumed in business activities, by using renewable energy, and by other means.
Scope 1+2 **2030** **30% reduction in CO_2 emissions per unit of production**	
Scope 3 **Reduction as determined in consultation with stakeholders**	For Scope 3 reductions, leverage technologies cultivated by the JGC Group to provide energy transition solutions to stakeholders • Reduction of plant energy consumption through smart O&M • CCS technology • Construction of environmentally conscious facilities such as solar power, biomass power, offshore wind power, and SMRs • Hydrogen / fuel ammonia operations • Chemical recycling (plastic and fiber waste), SAF, etc.

Human Rights Compliance

Basic stance

Recognizing that a respect for the human rights of all people affected by our business is a fundamental principle of our business, the JGC Group abides by the International Bill of Human Rights and the ILO Declaration on Fundamental Principles and Rights at Work of the International Labor Organization (ILO). A basic policy on human rights was established in fiscal 2021 to emphasize this commitment, and we ask not only the Group members but also all business partners to join us in respecting human rights.

For details on the Basic Policy for Human Rights & Development, please visit the JGC Group website.
https://www.jgc.com/en/about/policies.html

Framework for promoting human rights

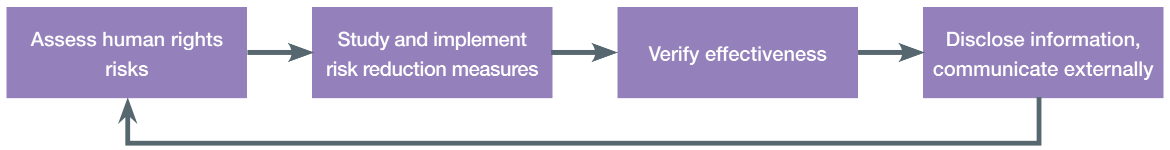
Under the Sustainability Committee chaired by the chairman and CEO of JGC Holdings, the JGC Group has established the Human Rights & Development Subcommittee as part of our human rights framework. To promote a unified, group-wide approach to human rights, the subcommittee consists of senior executives of main Group companies and works with the D&I* Subcommittee led by a human resources department. This ensures that respect for human rights is part of our corporate culture.

* D&I stands for Diversity and Inclusion

Human rights due diligence

In accordance with the UN's Guiding Principles on Business and Human Rights, we conduct human rights risk assessment on all EPC business stakeholders, including JGC Group employees, subcontractors, suppliers, business partners, and clients, to determine any potential human rights issues that may arise over the course of business. These issues are evaluated from standpoints such as likelihood and severity in order to identify priority risk issues. Risk reduction measures will be studied and implemented starting in fiscal 2022–2023, and we will seek to take similar measures in Functional materials manufacturing and other business.

Steps in human rights due diligence



Main initiatives

▶ JGC Vendor and Contractor Expectations

Potential subcontractors receive and are asked to understand a JGC Vendor and Contractor Expectations document that includes rules on respecting human rights. Respecting human rights is also stipulated in contracts concluded with partner companies, who are requested to understand and respect internationally recognized human rights.

▶ Member of Building Responsibly

Overseas operating company JGC Corporation is a board member of Building Responsibly (BR), an organization committed to protecting construction workers' rights and respecting their welfare. BR promotes respect of human rights for construction workers by establishing international standards and guidelines on work environments and conditions for occupational health and safety and housing.

Occupational Health and Safety

Basic stance

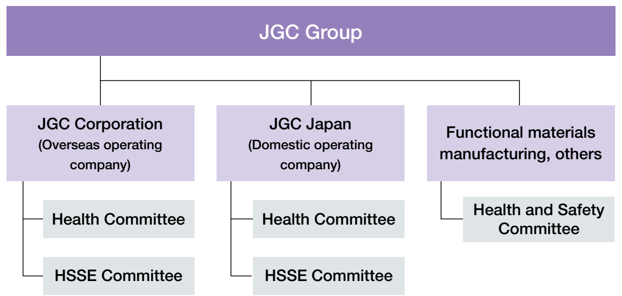
"Creating safe, secure, and healthy workplaces where all members can work with confidence" forms the basis of the JGC Group's stance on HSSE,* which, under the leadership of top management, reflects our commitment to preventing worksite and traffic accidents involving Group or partner employees. While maintaining a stance that is also respected by our clients, the Group will continue to take a rigorous approach to health and safety.

* HSSE stands for Health, Safety, Security and the Environment

HSSE management framework

Health and safety committees at EPC and functional materials manufacturing operating companies discuss and decide on key matters to implement decisions promptly at each company. JGC Holdings reviews committee meeting minutes to monitor these activities and maintains an emergency contact system for any serious incidents at each company. JGC Japan and JGC Corporation also report construction safety statistics to JGC Holdings each month, and this safety performance data is shared internally as part of thorough health and safety practices.

Framework for managing occupational health and safety



Raising awareness of HSSE

To raise awareness of HSSE at offices and construction sites in Japan and overseas, JGC Safety Day activities are conducted from May to July each year.

The activities culminate in an annual HSSE Conference in July, hosted by the president and COO of JGC Holdings. Here, the president himself speaks on HSSE and each domestic and foreign worksite gives a presentation on their HSSE initiatives to raise HSSE awareness across the JGC Group.

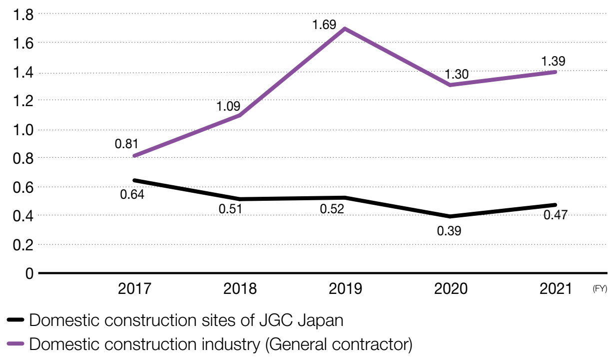
HSSE conference in 2021

High worksite safety performance

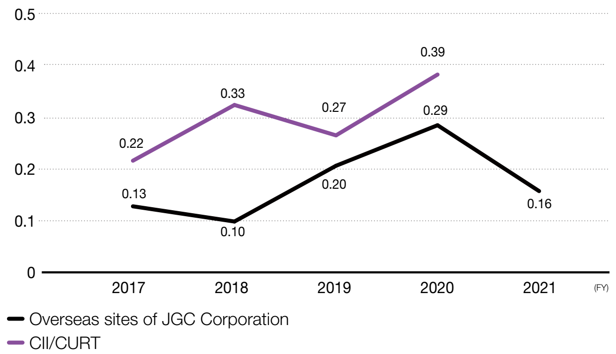
The Group's high safety record at construction sites in Japan and overseas attests to our constant commitment to safety as a core value shared by all members. Sites in Japan maintain a lost-time incident rate (LTIR)*1 below the industry average for general construction, and overseas sites have outperformed the annual total recordable incident rate (TRIR)*2 of the construction industry outside Japan as reported by CII/CURT.*3

*1 LTIR, indicating the frequency of lost-time incidents, is a safety benchmark in Japan representing the number of injuries due to workplace accidents per million actual working hours.
*2 TRIR is an OSHA (Occupational Safety and Health Administration) benchmark metric for the occurrence of workplace accidents (including injuries without lost workdays) representing the frequency of recordable accidents per 200,000 hours.
*3 Construction Industry Institute (CII) and Construction Users Roundtable (CURT) are U.S. construction industry organizations that compile safety performance of many companies in the U.S. and elsewhere.

Injury frequency at construction sites of JGC Japan compared to the domestic construction industry



TRIR of overseas sites of JGC Corporation compared to the CII average



Human Capital Initiatives

Basic stance

Human resources are our foremost management resource in driving JGC Group growth in EPC business, functional materials manufacturing, and other operations.

Fulfilling our purpose as a company calls on us to take current business to the next level and embrace transformation as an innovative group of engineers creating and pioneering new technology and business. To attain this organizational vision, each member must take on and persist in challenges beyond current paradigms. HR strategies pursued under new organizational framework guide us in establishing and applying a personnel system for acquiring, assigning, and training diverse human resources, and for encouraging and supporting them in these challenges. The strategies promote a vibrant workplace environment for all and will continue to foster a dynamic workforce that contributes to sustained growth and higher corporate value across the JGC Group.

Realization of the JGC Group Purpose

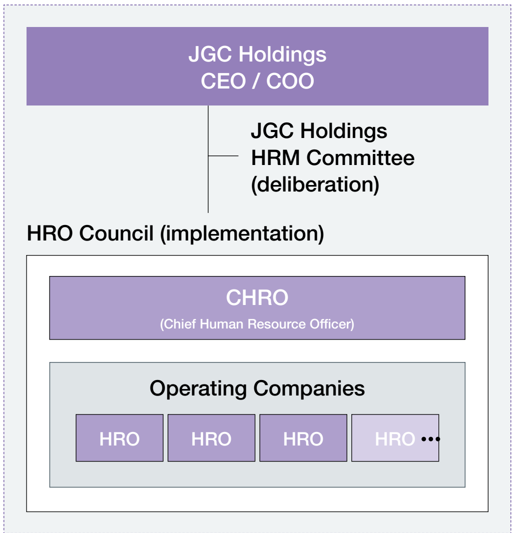
Organization envisioned
- An organization that continues to address social issues in a state of flux
- An organization that repeats cycles of developing current and new business through a culture of constant autonomous initiative

Ideal candidate profile

Human resources continuously making changes on their own

Advanced technical capabilities, expertise	Flexibility, adaptability	Awareness of new challenges	Collaborative skills	Leadership
Demonstrating autonomy, taking action as professionals in their field	Adapting to respond flexibly to external changes	Constantly finding or setting new challenges	Co-creation with diverse global stakeholders, acting on an understanding of social and client needs	Acting on a sense of ownership to overcome difficulties and take the lead in solving problems and implementing solutions in society

Diversity & Inclusion



Establishing a system for implementing HR strategies linked to management strategies

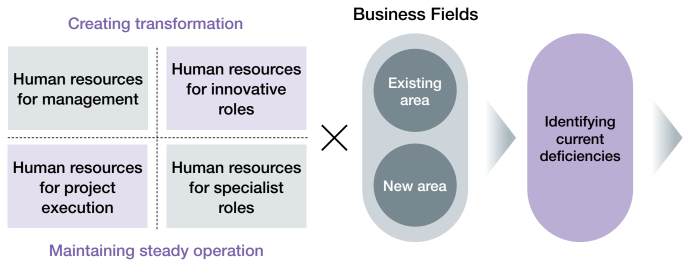
Human capital is an essential management resource to the Group, which makes HR strategies linked to management strategies a key theme. In April 2022, the Group appointed a Chief Human Resource Officer (CHRO) to lead in formulating and implementing strategic HR policies. Under this initiative, the CHRO chairs a council of the HROs of each company in a broad framework for formulation and implementation of HR strategies across the Group as we work toward the 2040 Vision. Besides formulating a human resources portfolio to identify the HR criteria and workforce needed for management strategies, this framework defines key issues and supporting strategies for strategic recruitment and development, retention, greater engagement, and succession planning, as well as guiding group-wide implementation.

Securing and accurately deploying diverse human resources to fulfill our purpose

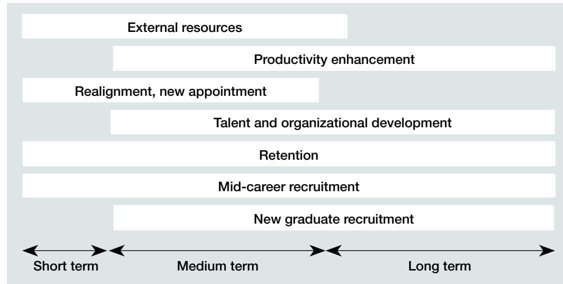
To realize the 2040 Vision and ensure sustained Group growth, we are building an ideal HR portfolio of four types of members in both existing business areas and new ones essential for growth. The portfolio is based on the dual axes of creating transformation and maintaining steady operation, with the former focused on long-term organizational management / sowing future business seeds and the latter on steady execution of current businesses, seeking revenue. As current deficiencies relative to the envisioned portfolio are identified, we conduct strategic recruitment, training, and deployment of human resources that includes recruitment of new graduates and mid-career professionals as well as reskilling and realignment of existing members.

Ideal human resources portfolio

Members classified into four roles



Methods for building the human resources portfolio



Personnel systems for training and supporting an ambitious workforce

Dynamic human resources continuously making changes on their own are continually produced as a basic goal of the JGC Group's HR development policy. Opportunities for skill development and career advancement are provided regardless of differences such as nationality, race, age, disability, or religion.

We believe that this unwavering dynamism and an ambitious corporate culture cannot be attained unless each of our members take on and persist in challenges. Beyond our existing personnel development system, an updated personnel system launched in fiscal 2022 introduces an array of measures and programs to support each member's ambition as much as possible. In this way, we foster a culture where each member rises to challenges. We are also shifting to job-type employment with job-specific placement, for synergy between individual development and corporate group growth.

Measures introduced with the new personnel system

Fostering an ambitious culture

- Systems such as these encourage each member to pursue their ambitions.
- Man-hour support system: Allows members to devote time at work to solving new issues they identify, even if other business divisions are involved; spurs independent problem-solving challenge and new value creation.
- JGC telecommuting system: Maximizes individuals' abilities and energy by relaxing restrictions on where and when work is done, under certain conditions.
- In-house recruitment system: Supports proactive, self-directed career development.

Providing skill development and growth opportunities

- OJT and a variety of skill-based individualized off-the-job training and HR development programs are in place.
- Self-improvement is supported for members acquiring certification or language skills. Total annual training (FY2021): 57,877 hours Training per person (FY2021): 18 hours

* Not including overseas field training.

P. 87 ESG Data Highlights

Baysix, a program for training future JGC Group leaders

This program supports well-defined career development of young employees from an early stage. It is designed to cultivate the four types of human resources needed for Group growth. Members who have just joined JGC clarify their vision of themselves in seven years and select one of a handful of career paths to this goal.

Enhanced engagement, motivation

- Better supervisor–associate communication is encouraged through implementation and expansion of measures such as level-specific training (including for division managers), assessor training, one-on-one support tools, engagement surveys, and 360° feedback.

Refinement of compensation

- Incentive bonuses and raises are given as a matter of basic principle for the value (results) that members demonstrate, so that members are more satisfied with compensation. With a complete shift to job-type employment in mind, benefits will be commensurate with the value of duties performed.

Workplace environments supporting job satisfaction

Sustainable growth is driven by our Group employees. The JGC Group is committed to work environments that are healthy and motivating, where engaged members can make the most of their abilities and offer their best performance.

Promoting diversity and inclusion

Guided by the sense of purpose and values that represent our corporate philosophy, we apply the shared Group value of respect for all people in a variety of personnel measures and frameworks. Not only is the Group committed to ensuring diversity by respecting differences such as nationality, race, sex, age, disability, or religion, we are creating new value from diversity by providing opportunities for exchanges of individual talent and energy, among other measures.

We also respect diverse lifestyles, and are promoting D&I by establishing an internal environment where we can make the most of the abilities of each member of our diverse workforce and continue to enhance motivation.

1 Ensuring diversity

Promotion of women's careers

The Group provides a comfortable working environment for women though an extensive family care system with sick / injured childcare leave, support for those raising children that includes up to two days off per month for childcare leave, and leave or shorter working hours for nursing care. Opportunities are also given for informal talks among female employees and for career counseling. Moreover, we hope to double the number of female managers by 2025 compared to 2020, and we are actively promoting women to management positions across the Group.

• Number and ratio of women in managerial positions*

	Fiscal 2019	Fiscal 2020	Fiscal 2021
Number of total managers	1,182	1,221	1,256
Number of female managers	26	30	35
Ratio of female managers (%)	2.2	2.5	2.8

* Applies to employees of JGC Holdings, JGC, and JGC Japan, after adoption of a holding company structure on October 1, 2019

VOICE

Many staff members are from other countries, and we have originally had a corporate culture that values diversity. As long as you welcome the chance to learn and grow, your abilities and achievements are recognized regardless of sex, nationality, or age. Some life events prevent people from working as much as they'd prefer, but recently, quite a few more men have been taking childcare leave for the birth of a child. We sense that the environment, both in our programs and in corporate culture, has become more conducive to work-life balance. Further promotion of diversity will call for management to listen to people's hopes and wishes and then plan and support their development over the long run.

Hideko Izumi
JGC Corporation
Project Solutions Center
PSC Talent Development Department

• Welcome Back system for returning members

This program encourages former female employees to rejoin us within three years of resigning to move and live at least a year with a spouse who was transferred or stationed abroad. Case-by-case decisions are made, with these members generally returning to their original division, for example.

• FCW Meetings for a dynamic female workforce

Female empowerment and motivation aimed at greater dynamism are sought by inviting women at JGC to attend the annual FCW Meeting organized by the Friendship Committee for Women Career Development (FCW), a joint initiative of Japan Cooperation Center for Petroleum and Sustainable Energy (JCCP) and Abu Dhabi National Oil Company (ADNOC). To this end, open discussions on women's career development are held with male and female committee members from both countries.

• Ricochare participation to cultivate potential female employees

We are also involved in nurturing future female Group leaders through participating in the Science and Engineering Challenge (Ricochare), an initiative of the Gender Equality Bureau of the Cabinet Office, to support female students interested in science or engineering careers.

Promoting recruitment of people with disabilities

To advance and stabilize recruitment of people with disabilities, Group company JGC Parallel Technologies Corporation was established in January 2021. Focusing on IT operational support and staffed by 11 workers as of June 2022, JGC Parallel Technologies has a personnel system in place for the convenience of those with disabilities.

Parallel × Technologies

Senior engagement and retention

The EPC business relies on proven engineering expertise, and we have long recognized the valuable experience of older engineers who have been actively recruited. JGC took the initiative to raise the retirement age to 65 in 2015, enabling senior employees to pass on expertise while bearing project responsibility and continuing to be compensated accordingly.

Globalized recruitment and engagement

Recent efforts supporting globalized recruitment and engagement include linking language proficiency to advancement at Group companies where English is common, establishing a prayer room at the Yokohama Head Office, cultivating a global mindset in members through measures such as overseas field training, and appointing non-Japanese to managerial positions.

P. 87 ESG Data Highlights

A warm welcome to returning JGC alumni

Recruitment by the Group is not limited to new graduates or other external applicants. We also actively rehire those who at one point left or retired from the Company. In fiscal 2021 these efforts were honored by the Japan Alumni Award, which promotes renewed ties between organizations and their former employees and recognizes outstanding efforts to this end.

P. 87 ESG Data Highlights

2 Promoting diverse working styles

• Family care system

The family care system in place helps members balance work with family affairs, childcare, and nursing care. For men and women alike, the system supports career development mindful of life events.

P. 87 ESG Data Highlights

Available reduction in working hours until children reach the age of three: 1–3 hours
Available reduction when children are between three years old and sixth-grade age: 1–2 hours

• JGC telecommuting system

To maintain high productivity while respecting the work-life balance of each member, flexible working styles have been adopted with relaxed restrictions on where and when work is done. Our basic approach is a hybrid style combining commuting and telecommuting for greater convenience.

• Shared offices

Shared offices at the Yokohama Head Office offer a variety of areas for different purposes, including private booths, open spaces for discussions, and smart cubicles for online meetings. This has inspired more flexible ways of working and stimulated internal interaction, leading to news ideas and value.

Promoting employees health

Members who thrive physically and mentally are considered by the Group to be basis for creating corporate value, and health is promoted accordingly. Besides workplace vaccinations and other preventive measures during the pandemic, the Group maintains several health programs, including regular stress assessment, an internal exercise program, and quarterly leave of nearly two weeks of vacation for employees stationed abroad.

IP / Intangible Asset Initiatives

Basic stance

Intellectual property and intangible assets are emphasized by the JGC Group as a management resource for sustained growth, and we are actively engaged in creating, protecting, and applying these assets and in associated risk management.

A broad range of these assets built up through internal “creation of knowledge” and collaborative “fusion of knowledge” are used to expand existing business, develop technology licensing, enter non-EPC areas, and transform business through digital technology while ensuring compliance, respecting others’ rights, and minimizing our own risks.

Internal “creation of knowledge” | Collaborative “fusion of knowledge”

JGC Group intellectual property and intangible assets

- Patents, designs, and trademarks
- Knowledge, know-how
- Software, copyrights
- Data
- System-building capabilities
- Project management
- Talent and organizational strengths
- Credibility, technical brands
- Client relations

Expanding existing business

Developing technology licensing

Entering non-EPC business areas

Transforming business through digital technology

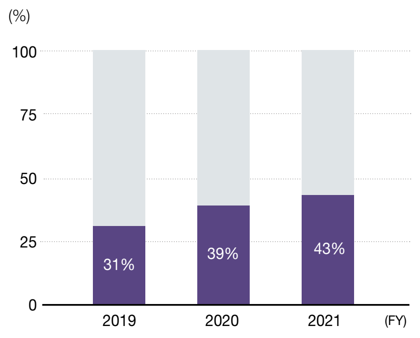
Example of forms of usage of intellectual property and intangible assets

Expanding existing business	Contributing to securing project orders in existing segments such as oil & gas, renewable energy, and life sciences, expanding functional materials manufacturing, and ensuring a competitive advantage through cost-cutting technologies
Developing technology licensing	Expanding a license portfolio that includes low carbon / decarbonization, clean energy, and chemical process technologies, and finding licensees
Entering non-EPC business areas	Co-creation for circular economy applications (with recycling technologies for plastic and fiber waste and used cooking oil), entering new business areas
Transforming business through digital technology	Establishing “soft” business such as stable plant operation / higher productivity services, plant maintenance, and safety risk assessment; building systems to convert tacit knowledge (including skilled engineers’ experience, knowledge, and expertise) into explicit knowledge

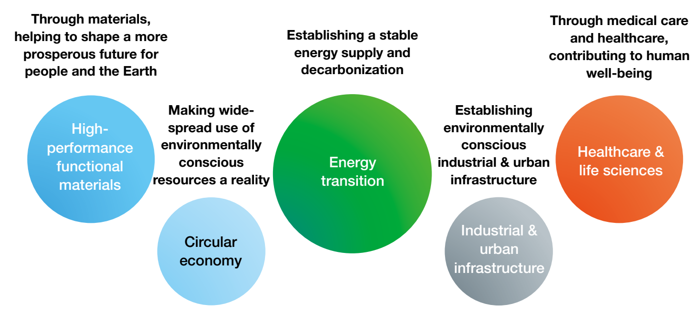
Building a strategic IP portfolio

IP portfolio building by the JGC Group is focused in the five key areas identified in the long-term management vision (2040 Vision) and in technology for digital transformation – innovative technology for streamlining operations. We are gradually increasing our ratio of patent applications in these areas.

Transition of the number of patent applications in our key business areas



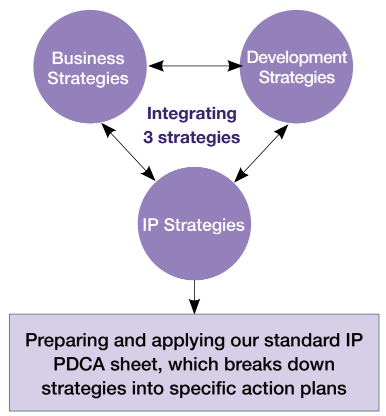
Five key business areas in 2040 Vision, our long-term management vision



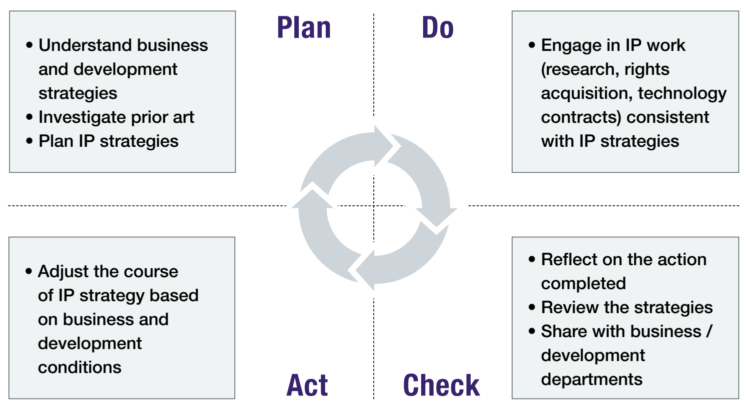
Implementing IP strategies linked to business and development strategies

Growth of current business and creation of new business is promoted by formulating IP strategies linked to our business and development strategies. The Group then repeats PDCA cycles for IP that integrate all three strategies.

Planning IP strategies



Implementing a PDCA cycle for IP



Monitoring implementation of IP strategy

To monitor implementation of IP strategy in technology development and commercialization for business areas we are exploring, matters of intellectual property are reviewed in the transitions between stages set by various committees related to development and commercialization, and the IP Department.

Risk management for IP / intangible assets

Departments in charge of business, technology development, legal affairs, and intellectual property collaborate to identify and reduce IP risks.

Thorough IP Clearance	Technology Contract Review	Management of Information Such as Trade Secrets
• Focusing on measures to respect others’ intellectual property rights and a prudent course of action to prevent patent disputes or the like	• Thorough management of technology contracts in agreements for projects, licensing, and joint development	• Strengthening trade secret protection by establishing information security rules, building an information management system, and conducting internal education

Educational programs on intellectual property

An original IP education program called JGC IP Academy is conducted to ensure that each member recognizes the importance of IP and intangible assets and brings an IP perspective to their own work.

JGC IP Academy

Scope		Details
New Employee Training (classroom learning, exercises)	**Group Training** (practical skill-building program) • R&D members • Engineers • Sales representative and others	**Main Courses** • Intellectual property systems • Patent searching • Using intellectual property • Technology contracts • Copyrights • Branding
E-learning (improving IP literacy) • Beginners • Practitioners • Management		

For details on IP / intangible assets, visit the JGC Group website.
https://www.jgc.com/en/business/tech-innovation/intellectual_assets/

Quality Management

Basic stance

Quality management is essential for safe operation and stable production at plants and other facilities. The JGC Group has established an ISO 9001-certified quality management system and ensures quality through systems and human resources that bring together valuable knowledge and skills built up over many years. These efforts include pursuing root causes of any quality issues and taking effective measures to prevent recurrence, as led by committees such as the Quality Assurance Committee to promote continuous improvement in ensuring quality.

Quality management system

Under the ISO 9001-certified quality management system in place at the JGC Group, quality policies established by each company form the basis for quality targets set at various organizational levels. After organizational issues are identified, quality targets and action plans are formulated, implemented, evaluated, and improved in PDCA cycles for continuous improvement of organizational performance.

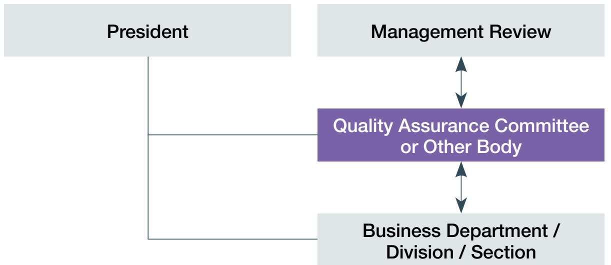
Framework for quality management at Group companies

Quality assurance committees or similar bodies in each Group company meet regularly.

The committees implement continuous improvements to ensure that quality of the products and services provided remains satisfactory, which includes investigating the root causes of any quality issues and preventing recurrence. The committees also evaluate these measures, as ongoing improvements are made.

In maintaining this framework for quality assurance, quality management activities are reviewed annually by the president of each company.

Positioning of each company's quality management system



Reinforcing Management Resources for Continuous Growth

Corporate Governance

Basic stance

The JGC Group remains aware that, in line with our purpose of "Enhancing planetary health," sound governance is the foundation for management in pursuit of higher medium- to long-term corporate value and sustained growth. We are therefore strengthening our corporate governance, which we view as a priority material issue.

Our central mechanism for corporate governance is the Board of Directors. Its governance structures, functions, and roles are continuously reviewed, with Board effectiveness analyzed and assessed each year as we seek progress through steady improvement.

In shareholder and investor engagement, we take a proactive stance in highly transparent information disclosure, and viewpoints from this dialogue are applied to strengthen governance and management.

In regulatory compliance and other matters essential to appropriate corporate governance as well, our purpose and values call on each employee and officer to maintain high ethical standards in everything they do, so that the Group as a whole works to enhance medium- to long-term corporate value and achieve sustained growth.

Outline of corporate governance system

JGC Holdings maintains a board of directors and an audit and supervisory board. The JGC Group has adopted a holding company structure under which operating companies pursue the Group's core business.

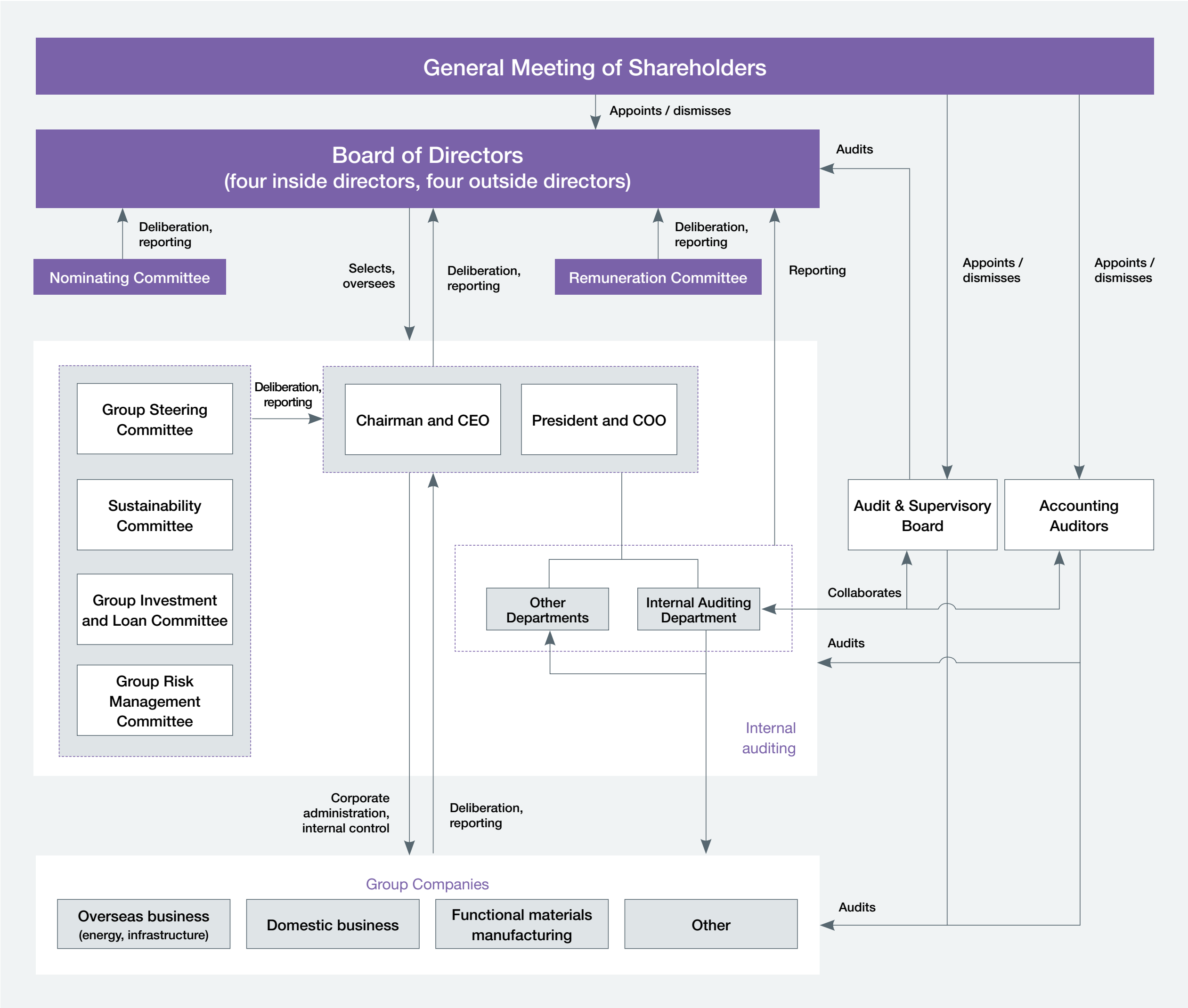
Separating management from execution provides greater clarity on roles and responsibilities of the holding company and operating companies. The holding company's role is to formulate management policies and oversee the operating companies from a medium- to long-term Group perspective. Operating companies apply Group management policies and strategies to respond flexibly and rapidly to market characteristics and seek further business expansion. This is intended to maximize corporate value and ensure optimal allocation of management resources for the Group as a whole while enhancing transparency of corporate management and strengthening overall Group governance. Committees have been established to deliberate key Group matters, and an executive officer system has been introduced to ensure efficient managerial decision-making and execution. Main elements of the corporate governance system are as follows.

Outline of corporate governance system

Body	Purpose	Meetings	Members	Head of organization
Board of Directors	• Resolves key matters of business execution • Oversees directors' executive actions • Deliberates on medium- to long-term strategies and issues	Generally monthly	Eight directors (including four outside directors) Five auditors (including three outside auditors) (For fuller discussions, others also attend as needed, such as operating company officers, executive officers in charge of certain areas, and those in relevant divisions)	Chairman and CEO Masayuki Sato
Audit & Supervisory Board	• Discusses or resolves issues based on reports of key auditing matters • Presents opinions based on the results above to directors or the Board of Directors as necessary	Generally monthly	Five auditors (including three outside auditors)	Full-time Audit & Supervisory Board member Yasumasa Isetani
Nominating and Remuneration Committees	• Deliberates on appointment and dismissal of officers, remuneration, etc.	Annually (and as needed)	Chairman and CEO Masayuki Sato President and COO Tadashi Ishizuka Four outside directors* (Shigeru Endo, Masayuki Matsushima, Kazuo Ueda, and Noriko Yao) * In order to improve fairness and transparency, the majority of the committee consists of outside directors.	Nominating Committee: Outside Director Shigeru Endo Remuneration Committee: Outside Director Masayuki Matsushima
Group Steering Committee	• Reports on and discusses the direction that the Group should take as well as steering matters such as management / business strategies for the Group as a whole and each operating company	Generally monthly	Chairman and CEO Masayuki Sato President and COO Tadashi Ishizuka Auditors (rotating) (Consists of members such as Group company officers appointed by the chairperson)	Chairman and CEO Masayuki Sato
Group Investment and Loan Committee	• Deliberates on holding company and Group investment and lending projects	Generally monthly	Standing members: Seven directors, executive officers, and auditors of the holding company and Group Non-standing members: Two executive officers of the holding company may attend, depending on the agenda	Chairman and CEO Masayuki Sato
Sustainability Committee	• Formulates Group policies and action plans related to sustainability; deliberation to evaluate and promote action supporting sustainability	Generally annually	Chairman and CEO Masayuki Sato Consists of members proposed by presidents and chairpersons of Group companies and approved by the president of their company	Chairman and CEO Masayuki Sato
Accounting Auditors	• CPAs Takemitsu Nemoto, Atsushi Nagata, and Takashi Inoue of KPMG AZSA LLC audit JGC accounts. • Auditing support is provided by nine other CPAs and eight assistants.			

Corporate Governance

Corporate governance system



Improvement Status of Internal Control System

JGC Holdings' Board of Directors determines the basic principles of the internal control system and revises them as necessary.

Improvement status

1. The Internal Auditing Department monitors, evaluates, and improves the effectiveness of the internal control systems of JGC Holdings and the JGC Group and conducts separate audits as necessary
2. Rules of Management Authority regulate the duties and authority of each role, and clarify the system of responsibilities in corporate management and business execution
3. Management rules for Group companies have been formulated and implemented to ensure efficient and appropriate operations across the Group

Response to the Corporate Governance Code

Since the implementation of the Tokyo Stock Exchange's Corporate Governance Code in June 2015, we have consistently held discussions on appropriate corporate governance for JGC Holdings and are making steady efforts to further solidify our corporate governance. A corporate governance report based on the revised Corporate Governance Code of June 11, 2021, is available on the JGC website.

Content

1. Implementation of all principles laid out in the Corporate Governance Code
2. Disclosure according to all 14 general principles, principles, and supplementary principles required by the Tokyo Stock Exchange

Board of Directors

Board functions

The Board of Directors is responsible for decision-making on medium- to long-term Group strategies and issues, and it provides oversight regarding business execution of Group companies. Board composition is intended to enable effective and efficient execution of these functions.

Basic policy on Board composition and diversity

From the standpoint of further enhancing discussions on medium- to long-term Group strategies and issues and of strengthening oversight regarding business execution of Group companies, the Board consists of the following members.

1. **Consists mainly of directors with broad experience in business markets and directors with a high level of knowledge and expertise in EPC operations, which is the primary Group business.**
2. **Independent outside directors are appointed in order to incorporate outside perspectives in management, with the expectation that these directors will provide objective advice to the Board and fulfill oversight functions from an independent viewpoint.**

As a matter of policy respecting the importance of diverse perspectives, members are appointed not solely based on professional experience and expertise but also on competence, regardless of nationality, race, or sex.

JGC Holdings appointed Ms. Noriko Yao as an outside director in June 2021, and continues its efforts to ensure Board diversity.

Skills Matrix of Directors (Four inside, four outside)

Name and position at JGC	Term as director (in years)	Outside director attendance at Board meetings in fiscal 2021	Field					
			Corporate management	Technology, project management, and IT	Global business	HR, human resource development, and labor relations	Finance and accounting	Legal and risk management
Masayuki Sato Chairman and CEO	12	–	●	●	●	●	●	
Tadashi Ishizuka President and COO	5	–	●	●	●	●		
Kiyotaka Terajima Director, Senior Executive Vice President, and CFO	6	–	●		●	●	●	●
Shoji Yamada Director	1	–	●	●	●	●		
Shigeru Endo Director	9	15/15 (100%)			●	●		●
Masayuki Matsushima Outside Director	6	15/15 (100%)	●		●	●	●	●
Kazuo Ueda Outside Director	3	15/15 (100%)			●	●	●	
Noriko Yao Outside Director	1	12/12 (100%)			●	●		●

Skills Matrix of Auditors (Two inside, three outside)

Name and position at JGC	Term as auditor (in years)	Outside auditor attendance at Board meetings in fiscal 2021	Field					
			Corporate management	Technology, project management, and IT	Global business	HR and human resource development	Finance and accounting	Legal and risk management
Yasumasa Isetani Audit & Supervisory Board Member	4	–	●	●	●	●		
Kazuyoshi Muto Audit & Supervisory Board Member	1	–	●	●	●	●		
Masao Mori Outside Audit & Supervisory Board Member	11	14/15 (93%)		●				
Koichi Ohno Outside Audit & Supervisory Board Member	8	15/15 (100%)					●	●
Norio Takamatsu Outside Audit & Supervisory Board Member	6	15/15 (100%)	●	●		●	●	

Note: Selection rationale for each skills matrix is shown on p. 67. The above list is not exhaustive or prescriptive, which indicates disciplines where directors and auditors can further demonstrate their expertise, not all disciplines in which each director and auditor excels.

Management Structure (As of June 2022)

Directors

Masayuki Sato
Representative Director, Chairman and Chief Executive Officer (CEO)

Tadashi Ishizuka
Representative Director, President and Chief Operating Officer (COO)

Kiyotaka Terajima
Member of the Board

Shoji Yamada
Member of the Board

Shigeru Endo
Outside Director

Masayuki Matsushima
Outside Director

Kazuo Ueda
Outside Director

Noriko Yao
Outside Director

Audit & Supervisory Board Members

Yasumasa Isetani
Audit & Supervisory Board Member

Kazuyoshi Muto
Audit and Supervisory Board Member

Masao Mori
Outside Audit & Supervisory Board Member

Koichi Ohno
Outside Audit & Supervisory Board Member

Norio Takamatsu
Outside Audit & Supervisory Board Member

Executive Officers

Kiyotaka Terajima
Senior Executive Vice President
Chief Financial Officer (CFO)

Takuya Hanada
Executive Vice President
Chief Human Resource Officer (CHRO) & Chief Digital Officer (CDO)

Yasuhiro Okuda
Senior Executive Officer

Masahiro Aika
Senior Executive Officer
Technology Commercialization Officer (TCO)

Masaki Ishikawa
Senior Executive Officer

Aya Yamazaki
Executive Officer

Takeshi Kawasaki
Executive Officer

Shigeru Adachi
Executive Officer

Yoshihiro Mizuguchi
Executive Officer
Chief Technology Officer (CTO)

Akihito Sawaki
Executive Officer
Chief Information Officer (CIO)

Keiji Tanigawa
Executive Officer

Satoshi Kurata
Executive Officer
General Counsel

Selection Rationale for Each Skills Matrix

Skill	Selection rationale
Corporate management	To achieve goals of the medium-term business plan (BSP 2025) and the 2040 Vision in line with the Group purpose of "Enhancing planetary health," the Group requires directors experienced in establishing clear strategies for sustained growth and higher corporate value even in a turbulent business environment.
Technology, project management, and IT	The Group requires directors with a high level of knowledge and expertise in our main businesses in order to pursue, manage, and oversee growth strategies for sustained growth and greater corporate value. Directors must also be highly knowledgeable and experienced in the five business areas of energy transition, high-performance functional materials, circular economy, healthcare & life sciense, and industrial & urban infrastructure that will be essential in social issues we must begin to address to fulfill our purpose of "Enhancing planetary health."
Global business	Implementing growth strategies and managing and supervising progress toward sustainable Group growth and higher corporate value calls for directors with experience in overseas business management and extensive knowledge of and familiarity with everyday life, culture, business environments, and so on outside of Japan.
HR, human resource development, and labor relations	JGC Group employees are required to possess advanced technical capabilities and expertise, an appreciation of different cultures and diversity in order to work with others of many nationalities, and a mental attitude that helps us make the most of our organizational strengths. To this end, personnel management must be established that ensures peak employee performance, and the Group requires directors with solid knowledge and experience in human resources management or development, including promotion of diversity.
Finance and accounting	Beyond ensuring accurate financial reporting, the directors required by the Group must have reliable knowledge and experience in finance and accounting, as needed to build a strong financial foundation and to formulate financial strategies both for growth investments (including M&As) aimed at sustainable gains in corporate value and for higher shareholder return.
Legal and risk management	A suitable governance system is fundamental to sustainable growth in corporate value. Moreover, to continue enhancing Board oversight effectiveness, the Group requires directors with solid knowledge and experience in corporate governance, risk management, and compliance.

Introduction of Outside Directors

This section introduces JGC Holdings' outside directors, who serve an important role on its Board of Directors, Nominating Committee, Remuneration Committee, etc., as well as their resumes and reasons for their appointment.

Name / Resume / Reason for appointment

Shigeru Endo
Outside Director

Apr. 1974	Joined the Ministry of Foreign Affairs
Apr. 2001	Director-General, Middle Eastern and African Affairs Bureau
Feb. 2002	Director-General, Consular and Migration Affairs Department
Aug. 2003	Ambassador to The Permanent Mission of Japan to the United Nations and Other International Organizations in Geneva and Consul General, Consulate General of Japan in Geneva
Mar. 2007	Ambassador Extraordinary and Plenipotentiary to the Republic of Tunisia
Jul. 2009	Ambassador Extraordinary and Plenipotentiary to Saudi Arabia
Oct. 2012	Retired from the Ministry of Foreign Affairs
Jun. 2013	Outside Director, former JGC CORPORATION
Jun. 2013	Outside Director, IINO KAIUN KAISHA, LTD.
Apr. 2014	Special Assistant to the Minister for Foreign Affairs (current post)
Jun. 2018	Outside Director, ADEKA Corporation (current post)
Oct. 2019	Outside Director, JGC HOLDINGS CORPORATION (current post)

Mr. Shigeru Endo does not have direct experience in corporate management, but he has served as the ambassador extraordinary and plenipotentiary to Saudi Arabia and Tunisia and possesses extensive experience and knowledge of the Group's principal business market. Appointment as outside director reflects the Group's determination that this experience and knowledge will be applied in appropriately performing the duties of providing accurate advice and opinions on management and business and fulfilling a supervisory role from an independent standpoint, which will contribute to sustainable enhancement of corporate value.

Masayuki Matsushima
Outside Director

Apr. 1968	Joined Bank of Japan
Jun. 1998	Executive Director, in charge of the Bank's International Affairs
Jun. 2002	Senior Advisor, the Boston Consulting Group
Feb. 2005	Senior Executive Advisor, Credit Suisse Securities (Japan) Limited
Jun. 2008	Chairman, Credit Suisse Securities (Japan) Limited
May 2011	Senior Advisor, the Boston Consulting Group
Jun. 2011	Outside Director, Mitsui Fudosan Co., Ltd.
Jun. 2011	Outside Director, Mitsui O.S.K. Lines, Ltd.
Sep. 2014	Senior Advisor, Integral Corporation (current post)
Jun. 2016	Outside Director, former JGC CORPORATION
Jul. 2017	External Councillor, Grant Thornton Taiyo LLC (current post)
Oct. 2019	Outside Director, JGC HOLDINGS CORPORATION (current post)

Mr. Masayuki Matsushima has extensive experience and knowledge in finance and corporate management, having served as executive director of the Bank of Japan and in other significant positions. Appointment as outside director reflects the Group's determination that this experience and knowledge will be applied in appropriately performing the duties of providing accurate advice and opinions on management and business and fulfilling a supervisory role from an independent standpoint, which will contribute to sustainable enhancement of corporate value.

Kazuo Ueda
Outside Director

Apr. 1989	Assistant Professor, Faculty of Economics, The University of Tokyo
Mar. 1993	Professor, Faculty of Economics, The University of Tokyo
Apr. 1998	Member of the Policy Board, Bank of Japan
Apr. 2005	Professor, Graduate School of Economics, The University of Tokyo
Oct. 2005	Dean, Graduate School of Economics, The University of Tokyo
Oct. 2005	Dean, Faculty of Economics, The University of Tokyo
Oct. 2008	Outside Director, Development Bank of Japan Inc. (current post)
Apr. 2017	Director, Center for Advanced Research in Finance, The University of Tokyo
Apr. 2017	Professor, Faculty of International Studies, Kyoritsu Women's University
Jun. 2017	Professor Emeritus, The University of Tokyo (current post)
Jun. 2017	Outside Audit & Supervisory Board Member, MELCO HOLDINGS INC.
Jun. 2019	Outside Director, former JGC CORPORATION
Oct. 2019	Outside Director, JGC HOLDINGS CORPORATION (current post)
Apr. 2020	Dean, Faculty of Business, Kyoritsu Women's University (current post)
Apr. 2020	Professor, Faculty of Business, Kyoritsu Women's University (current post)

Mr. Kazuo Ueda does not have direct experience in corporate management but has extensive academic experience as an expert on macroeconomics. Appointment as outside director reflects the Group's determination that this experience and knowledge will be applied in appropriately performing the duties of providing accurate advice and opinions on management and business and fulfilling a supervisory role from an independent standpoint, which will contribute to sustainable enhancement of corporate value.

Noriko Yao
Outside Director

Mar. 1995	Graduate, Legal Training and Research Institute
Apr. 1995	Registered as an attorney, Fukuoka Bar Association
Sep. 2001	Joined Paul, Hastings, Janofsky & Walker LLP
Oct. 2002	Registered as an attorney, Daini Tokyo Bar Association
Oct. 2002	Admitted as an attorney, New York State Bar Association
Jul. 2007	Joined TMI Associates
Jan. 2008	Partner, TMI Associates (current post)
Oct. 2014	Outside Audit & Supervisory Board Member, Japan Overseas Infrastructure Investment Corporation for Transport & Urban Development
Nov. 2015	Outside Director, Meiko Network Japan Co., Ltd. (current post)
Jun. 2016	Outside Audit & Supervisory Board Member, Sato Holdings Corporation (current post)
Jun. 2019	Outside Director, Asahi Net, Inc. (current post)
Jun. 2021	Outside Director, JGC HOLDINGS CORPORATION (current post)

Ms. Noriko Yao does not have direct experience in corporate management, but she possesses professional knowledge and keen insight as an attorney at law with extensive international experience. Appointment as outside director reflects the Group's determination that this experience and knowledge will be applied in appropriately performing the duties of providing accurate advice and opinions on management and business and fulfilling a supervisory role from an independent standpoint, which will contribute to sustainable enhancement of corporate value.

Messages from Outside Directors (Outside director profiles are provided on p. 68.)

Turning Risk into Value

Shigeru Endo
Outside Director

As the first year of the medium-term business plan, “Building a Sustainable Planetary Infrastructure 2025 (BSP 2025),” fiscal 2021 saw the JGC Group sow various seeds for the future despite challenges such as the ongoing pandemic and the Ukraine crisis. These included starting full-scale production at a plant for high thermal conductivity silicon nitride substrates, demonstrating a supply chain model for SAF sourced from used cooking oil, investing in U.S.-based NuScale, and establishing JGC Asia Pacific. This last achievement epitomizes the company’s founding ideal of “local production for local consumption,” which I think will become increasingly important in the EPC industry. I look forward to seeing the Group reap the fruits of this labor, and good results will be essential in attaining BSP 2025 goals. Still, a significant loss was recorded from the Ichthys LNG project in Australia. This was regrettable, but success in BSP 2025 requires the Group to redouble efforts to increase margins. Proactive marketing will also be put to the test. To address several years of low ROE, the Board has also been engaged in discussions on increasing capital efficiency.

In April this year, JGC Holdings moved from the First Section to the Prime Market in the newly restructured Tokyo Stock Exchange. Investors expect constant improvement of corporate governance, and the Group’s efforts also include taking on sustainability management at a deeper level. This fiscal year saw the first appointment of a non-Japanese as president of the subsidiary JGC Corporation, and besides addressing environmental matters such as establishing the Sustainability Committee, supporting TCFD recommendations, and responding to CDP evaluation, the Board now also discusses human rights policies and similar issues more thoroughly. Further consideration will need to be given to principles upheld by the UN and the international community. Delving more deeply into DX, job-focused employment, reskilling, and the like is no easy task for the Group, and I sense that it calls for company-wide discussions, especially on how to reconcile these things with a corporate culture fostered over many years.

In my message last year, I shared my belief that international geopolitical dynamics would be quite different in the future, and we saw this come to pass in February with the Ukraine crisis. It is unclear how the conflict will be resolved, and we must carefully monitor the impact on the Group. Nature itself may also pose serious challenges to the Group. Although I have so far emphasized the importance of crisis response, this time I should stress the importance of resilience as a corporate group. It’s a matter of persevering despite setbacks. All companies must minimize risk, and the JGC Group is no exception. Indeed, JGC has distinguished itself as a corporate group that manages risk well—what they might describe as placing oneself at the core of risk, and address directly from intimate knowledge of it. And the Group shows its true worth by turning risk into value. This is difficult work, but I believe that the Group is called on to manage risk to create economic value, and in turn, social and environmental value, which ultimately enhances planetary health.

Steady Initial Steps in BSP 2025

Masayuki Matsushima
Outside Director

Fiscal 2021 brought its share of challenges in the business environment as the pandemic reemerged, conditions in Ukraine deteriorated, and environmental problems worsened.

Ultimately, the JGC Group did fall short of the year’s order target, but adversity teaches wisdom. The Group invested in its future in several ways—by strengthening and streamlining Total engineering business, establishing a base for project execution in the Asia-Pacific region, and in Japan, by establishing a CVC fund for start-ups and by founding the cultured-meat enterprise Organoid Farm, among other efforts.

In Functional materials manufacturing, a mechanism to promote group-wide investment in growth fields from the standpoint of planning, funding, and human resources is also beginning to work.

In these ways, the Group has responded to changes in the business environment and flexibly adapted its framework for pursuing sales. I have seen steady progress in establishing the basis for sustainable growth.

Meanwhile, in corporate governance, the Board’s main agenda item has been how to monitor and review the medium-term business plan, “Building a Sustainable Planetary Infrastructure 2025 (BSP 2025).” Although much work remains in pursuing the three key strategies of transforming EPC operations, expanding manufacturing business for high-performance functional materials, and establishing future engines of growth, steady initial steps were taken this first year of the plan.

Besides resolutions, Board meetings involve deliberation and reporting. Supplemental study meetings are also arranged. It’s clear that these exchanges of opinions are both lively and sincere. An additional outside director has joined us, bringing the total to half of the Board. We are determined to fulfill our vital mission.

As the world targets carbon neutrality by 2050, the Group has also set a target of net-zero CO_2 emissions by this date. In business, pursuing the energy transition toward decarbonization is essential, but we should also remember that our offices themselves are hotbeds of GHG emissions. Even taking a stand on clearing out unneeded documents and other material has an added benefit of freeing up office space and enhancing productivity.

The Group’s future rests on the shoulders of each employee. I encourage them to take pride in this ambitious role. At the same time, members should do their part in designing the future of the JGC Group.

Messages from Outside Directors (Outside director profiles are provided on p.68.)

Faithful Allocation of Management Resources Required, Even with Stronger EPC Demand

Kazuo Ueda
Outside Director

In last year's report I observed that the market appeared not to have fully appreciated the significance of the Group's long-term management vision (2040 Vision) and medium-term business plan "Building a Sustainable Planetary Infrastructure 2025" (BSP 2025). The share price changed greatly over the next year, however, reaching a low of ¥885 in August 2021 and at one time more than doubling to ¥2,088 in June 2022.

Still, market analysts mainly attributed the higher share price to optimism about the JGC Group securing more LNG projects in North America and elsewhere due to higher geopolitical risks and energy prices, rather than investors truly beginning to appreciate BSP 2025.

This market assessment, and the underlying global economic and political conditions, suggest that Group management is still in a difficult phase. In essence, as underway since last year, BSP 2025 calls for the transformation of EPC operations (in LNG projects and others), expansion of manufacturing business for high-performance functional materials, and establishment of future engines of growth. Global EPC business in particular has faced the considerable challenge of low profitability in recent years. The Group continues to pursue greater profitability through extensive use of DX, among other measures, as some management resources are gradually shifted to new growth segments and future pillars of business are developed. This is the basic stance.

Yet while stronger demand for EPC projects is expected due to geopolitical risks that are suddenly more acute, several encouraging developments we have seen in new growth segments have not reached the point of making these segments viable sources of revenue in the near future. Although Functional materials manufacturing business has been performing well amid a global economic recovery that has favored goods over services, we will need to stay vigilant, as a global economic slowdown is expected.

In this environment, the Group faces a dilemma in how management resources should be allocated. Nevertheless, I believe the Group should remain true to their initial position. Specifically, in EPC operations, the Group should continue working toward higher margins during this anticipated period of brisk orders while cutting costs through DX and other means. Over the medium to long term, the Group should strengthen its focus on projects with low environmental impact in this segment. The leeway in management resources this affords should then be channeled into new business segments and Functional materials manufacturing.

Admittedly, steering this course in management will not be easy. Functional materials manufacturing is profitable, but besides the issue of how demand will evolve over the short term, the Group must also be ready to manage the larger scale of the business that investment will create. Amid great changes, it is a pleasure to see how active the EPC segment is, however, human resources should also be invested in new segments.

Many management challenges remain, but I can observe that our discussions are now more often positive. While keeping these points in mind, I welcome the opportunity to continue speaking at Board meetings and other exchanges.

Leveraging Strengths in an Unwavering Transformation

Noriko Yao
Outside Director

By way of introduction, I was appointed outside director in June 2021, one month after the announcement of the JGC Group's long-term management vision (2040 Vision) and medium-term business plan "Building a Sustainable Planetary Infrastructure 2025 (BSP 2025)." This is my second year as a director.

Fiscal 2021 was the first year of BSP 2025, positioned as the initial phase in the 2040 Vision and expected to be "five years of challenge." This year, the Group implemented an array of specific new measures and projects supporting BSP 2025 objectives, which included establishing the Sustainability Committee, demonstrating a supply chain model for SAF production sourced from used cooking oil, and starting full-scale production at a high thermal conductivity silicon nitride substrate plant.

Regrettably, a dispute over Ichthys LNG plant construction that had been pending for some time ultimately led to the posting of a substantial extraordinary loss. The settlement was made to eliminate uncertainty in future management and move on, as the Group pursues BSP 2025, but it will be imperative to avoid such incidents. To this end, internally, the Company is reexamining and analyzing causes from various perspectives, considering countermeasures, holding many discussions, and strengthening efforts and frameworks to prevent recurrence.

As for the Group's business environment, changes continue to unfold at a rapid pace. We have seen multiple waves of COVID-19 infection, costlier procurement and transport due to the conditions in Ukraine and other factors, developments in the global trend toward decarbonization, and energy security issues, for example. In such uncertainty, there is an even greater need for timely insight and responsiveness to the potential impact of these abrupt environmental changes. Effective monitoring and review of BSP 2025 is also more important.

In organizational transformation supporting transformation of business areas and models, the Group established JGC Asia Pacific, which is expected to strengthen the framework for regional management in the Asia-Pacific region considerably. At the same time, in our role as the holding company of the corporate group that includes this company, we will continue to monitor management of Group governance, ensuring a balance between assertive and defensive positions.

Taking on new challenges presents a variety of risks that the Group has not faced before. No enterprise is entirely free of risk, but risk can be reduced. A turbulent environment calls for prompt decision-making and managerial judgment, but also essential is constant reinforcement of corporate governance. This includes defensive structures and governance systems that support appropriate risk-taking while companies also pursue assertive management.

The business environment remains difficult, but it is precisely in times such as these that I hope to see JGC, in supporting the foundations of industry and society at large, apply its strengths of vision, technical expertise, management capabilities, and risk management as a unified group, boldly take on new challenges, address social issues, and grow and expand as a corporate group.

Reinforcing Management Resources for Continuous Growth

Policies and procedures for senior management appointment and dismissal

Appointment process	**Appointment of senior management and nomination of candidates for directors** **1. Deliberations of the Nomination Committee, which consists of a majority of outside directors and is chaired by an outside director, are focused on the following items.** (1) Qualities such as character and views (2) Senior management and inside directors: Qualities such as experience, performance, and management capabilities, as defined in succession planning (3) Outside directors: Qualities such as independence and expertise **2. After comprehensive deliberation by the Nominating Committee, a decision is made by the Board.** Appointment of senior management and nomination of director candidates follows this process and involves ample discussion before decisions are made, with the understanding that these individuals may one day be candidates to succeed the CEO.
Dismissal process	**Dismissal of senior management** In the event of any of the following, the Board decides on dismissal after deliberation by the Nominating Committee. (1) Wrongdoing, impropriety, or breach of faith (2) Violation of laws or articles of incorporation (3) Loss of the qualities and capabilities initially required for appointment

Succession plan

The following succession plan in place informed by discussions of the Nominating Committee and Board is beginning to be initiated, reflecting the Group's recognition of the importance of succession planning in sustainable growth of corporate value.

Purpose

- Toward attainment of BSP 2025 and the 2040 Vision, and for lasting enhancement of corporate value beyond this, we recognize the necessity of appointing optimal directors and executive officers for the current business environment and management strategies.
- Based on the business environment and management strategies, the plan clarifies the knowledge, experience, abilities, and personal qualities sought in top management, guiding development and selection of the Group's next leaders and enabling continuous appointment of these leaders whenever needed.

Stance on leadership criteria

- Leadership criteria are determined through talks with current top management facilitated by a third-party organization, and future needs in leaders are defined from a medium- to long-term management vision.
- These criteria are classified on minimum essential attributes and ideal attributes (3-level scale), and candidates are assigned to groups with specific level requirements.

Stance on succession planning

- The basic stance taken on succession planning involves defining leadership criteria, selecting several individuals for near- and far-term candidate groups, providing opportunities to develop required attributes and gain experience, and monitoring progress each year as candidates are groomed over the medium to long term.

Cross-shareholdings

1 Purpose

Following revision in June 2018, the Corporate Governance Code now includes guidance on topics such as reduction of cross-shareholdings and the cost of capital. The Group refrains from cross-shareholdings except in cases where maintaining and strengthening relationships with clients and business partners will contribute to higher medium- to long-term corporate value for the Group. Moreover, each year, the Board of Directors reviews the significance of maintaining each cross-shareholding. Both quantitative and qualitative aspects are reviewed. Quantitatively, total shareholder return and ROE are checked for each company. Aspects that are difficult to quantify include whether business advantages and the like are commensurate with the cost of equity. Sale of shares deemed to have lost their significance is investigated accounting for the market environment and changes in stock prices. The review process is described below, along with a record of past sales and reductions.

2 Basis for exercising voting rights

In exercising voting rights for cross-shareholdings, advantages and disadvantages are weighed based on whether the decision will contribute to sustained growth of the company involved, and thus, higher Group corporate value over the medium to long term.

Review process of holding objective and stock to be sold

Primary criteria for reviewing holding objective

Quantitative aspects
Dividend yield from held stock, valuation gains, etc.

Qualitative aspects
Difficult to quantify business benefits.

↓

The Board of Directors reviews the objective of cross-shareholdings each year considering both quantitative and qualitative aspects, as well as cost of capital comparisons.

↓

Concerning stock whose holding objective is determined as diminished upon review, the Board of Directors discusses its sale, after a consideration of factors such as the market environment and changes in stock price.

History of sales and reductions in cross-shareholdings since the introduction of the Corporate Governance Code

	Number of companies whose stock was sold	Total value of sales (based on acquisition price)	Reduction rate*
Fiscal 2015 to fiscal 2021 (fiscal 2021 in parentheses)	37 companies (two companies)	¥4,537 million (¥30 million)	Approx. 35%

* Represents the reduction rate for publicly listed stock held as of April 1, 2015 (ratio based on acquisition prices).

Corporate Governance

Board effectiveness evaluation

Board effectiveness is analyzed and evaluated annually, efforts toward improvement are reviewed, and issues linked to further gains in effectiveness are discussed by the Board in pursuit of continuous improvement. Presented below is a summary of the process of evaluating Board effectiveness in fiscal 2021, the survey, results, and future issues to address, and main past efforts to enhance efficacy.

Process	• Directors and auditors complete a survey conducted by the Board secretariat • Progress is reviewed, including progress in areas for improvement when effectiveness was last evaluated • Opinions are collected on current Board effectiveness and ways to enhance Board effectiveness • The Board reviews the results, focusing on key future issues
Content of survey	• Checks compliance with principles of Section 4, "Responsibilities of the Board," of the Corporate Governance Code, including progress since the previous evaluation • Main evaluation items: Board composition, management, discussion, oversight functions, dialogue with shareholders, own involvement, and management of Nominating and Remuneration committees • Solicits open-ended responses on Board performance and areas for improvement
Evaluation results and future issues to address	**Evaluation results** Survey analysis and evaluation has indicated that overall, the Board is functioning effectively. Key issues identified for fiscal 2021, based on the fiscal 2020 Board effectiveness evaluation, included improving the framework for monitoring and review of the medium-term business plan, implementing DX and SDG initiatives, creating opportunities for a free exchange of opinions, and reporting to the Board on Nomination and Remuneration Committee discussions. A variety of measures were taken for these issues. Results confirmed that a majority considered all issues to have been addressed adequately or generally adequately. **Issues to address for greater effectiveness, response policy** Issues • Effective monitoring and review of the medium-term business plan • Discussing the Group business portfolio from the standpoints of sustainable profitability and cost of capital • Spurring further deliberation at Board meetings Policy in responding • Enhance Board discussions and supervision on the issues listed above

Main efforts to date for improving Board effectiveness

	Fiscal 2019	Fiscal 2020	Fiscal 2021
Main Board and committee efforts	• Reduced inside directors by three and increased outside directors by one following the June 2019 general shareholders' meeting, to introduce a system of nine directors (including three outside directors) • Reorganized various committees under the holding company structure and revised matters discussed by the Board	• Revised Board rules and internal decision-making rules to make agenda item criteria more fitting for the holding company structure • Held multiple Board meetings to discuss the establishment of the 2040 Vision and medium-term business plan, BSP 2025	• Basic policy on sustainability enacted, Sustainability Committee established, and committee rules formulated by the Board • Improved the framework for monitoring and review of measures in the medium-term business plan • Revised Board rules and internal approval procedures in accordance with clarification of investment and loan categories and revision and improvement of review and approval procedures
Director training*	• Company seminars (Board of the holding company) • Company seminars describing business of Group operating companies involved in manufacturing and consulting • On-site plant and office visits by outside directors and auditors to workplaces of the manufacturing operating company	• External seminars (workshops on "ambidextrous" management led by a business school professor)	• Internal workshops on EPC risk and financial risk management

* Policy on director training: JGC Holdings bears costs for and provides opportunities and information for directors and auditors to acquire the knowledge and competence to fulfill their roles and responsibilities.

Director compensation

Policy on determining director compensation amounts or calculation methods

Basic policy, general shareholders' meeting resolutions	• Under a basic policy to secure the management personnel needed for greater global competitiveness and higher medium- to long-term corporate value, a resolution made at the 113th general shareholders' meeting on June 26, 2009, set maximum annual director compensation at ¥690 million, with maximum auditor compensation at ¥88 million. • As for the policy on determining the amount, calculation, and breakdown of compensation for individual directors, compensation shall not exceed the range resolved at the general shareholders' meeting, and details are discussed in advance by the Remuneration Committee (which consists of a majority of outside directors and is chaired by an outside director), whose report is considered by the Board to reach a decision.
Process for determining amount of compensation	• The amount and breakdown of compensation for individual directors within the range set at the general shareholders' meeting is at the discretion of the chairman of the Board, who as the Company's chief executive officer is most familiar with the duties and responsibilities of each director, their performance, and the extent to which this performance contributes to higher corporate value. • To ensure fairness, transparency, and consistency with this decision policy, decisions by the chairman and CEO reflect the results of comprehensive deliberation by the Remuneration Committee on evaluation of individual directors and the amount of remuneration. • The Board has determined that final decisions have been consistent with this policy, and in making this determination, the Board has been informed of a summary and results of Remuneration Committee deliberations, as well as final decisions by the chairman and CEO.
Fixed, performance-based, and restricted stock compensation	• Inside directors receive fixed compensation as well as performance-based and restricted stock compensation, with the former being a short-term incentive and the latter a medium- to long-term incentive. • The compensation mix is designed to provide a higher proportion of variable compensation (performance-based and restricted stock compensation) for higher performance and rank. **Fixed compensation** • Determined according to each director's position and the value of their duties, accounting for the capabilities required and the weight and impact of those duties. • Consists of base compensation and an allotment for directors or representative directors, both paid monthly. • Outside director compensation is limited to fixed compensation, to enable management oversight from a position independent of business execution. **Performance-based compensation** • Designed as a key incentive to meet performance figures each fiscal year and steadily improve corporate value over the medium and long term. • Specifically, individual performance-based compensation is determined from a base amount (calculated for each position and indexed to operating income and net income attributable to owners of the parent, which are targets in the medium-term business plan) and individual evaluation (accounting for responsibilities to fulfill in order to attain the long-term management vision and medium-term business plan) and paid in July of each year. • As a performance indicator, net income attributable to owners of the parent is weighted, in view of the responsibility to shareholders for results. It is weighted higher for those in higher positions. • Performance-based compensation does not apply when there is a net loss attributable to owners of the parent. • Individual evaluations are discussed by the Remuneration Committee to ensure transparency and fairness. • To secure outstanding management personnel, remuneration standards were reviewed in fiscal 2021 by referring to information including market data on remuneration provided by specialized external organizations. Also, the linkage between performance and remuneration was further reinforced to ensure that performance figures for each director are met. **Restricted stock compensation** • ntroduced so that directors share the benefits and risks of stock price fluctuations with shareholders and conduct business accordingly, and to further incentivize a higher stock price and greater medium- to long-term corporate value. • Restricted stock compensation is allocated in August, and on August 6, 2021, some 13,713 restricted shares corresponding to 10% of base compensation (equivalent to ¥13 million) were allocated to three directors. • The restricted stock compensation system is summarized below. **Scope**: Directors and executive officers of the holding company and directors of Group companies **Maximum monetary compensation**: ¥190 million per year **Total shares of restricted stock (maximum)**: 149,300 shares per year (approximately 0.06% of total issued shares) **Restricted stock period**: 3–30 years

Breakdown of executive compensation

Category	Total value of compensation, etc.	Breakdown of compensation, etc.					
		Fixed compensation		Performance-based compensation		Restricted stock compensation	
		Number of eligible executives	Total amount provided	Number of eligible executives	Total amount provided	Number of eligible executives	Total amount provided
Seven directors (excluding outside directors)	¥199 million	7	¥184 million	0	–	5	¥14 million
Three Audit & Supervisory Board members (excluding outside Audit & Supervisory Board members)	¥36 million	3	¥36 million	–	–	–	–
Seven outside executives (four outside directors and three outside Audit & Supervisory Board members)	¥66 million	7	¥66 million	–	–	–	–

Note: As of the end of fiscal 2021, there were nine directors (including four outside directors) and five auditors (including three outside auditors).

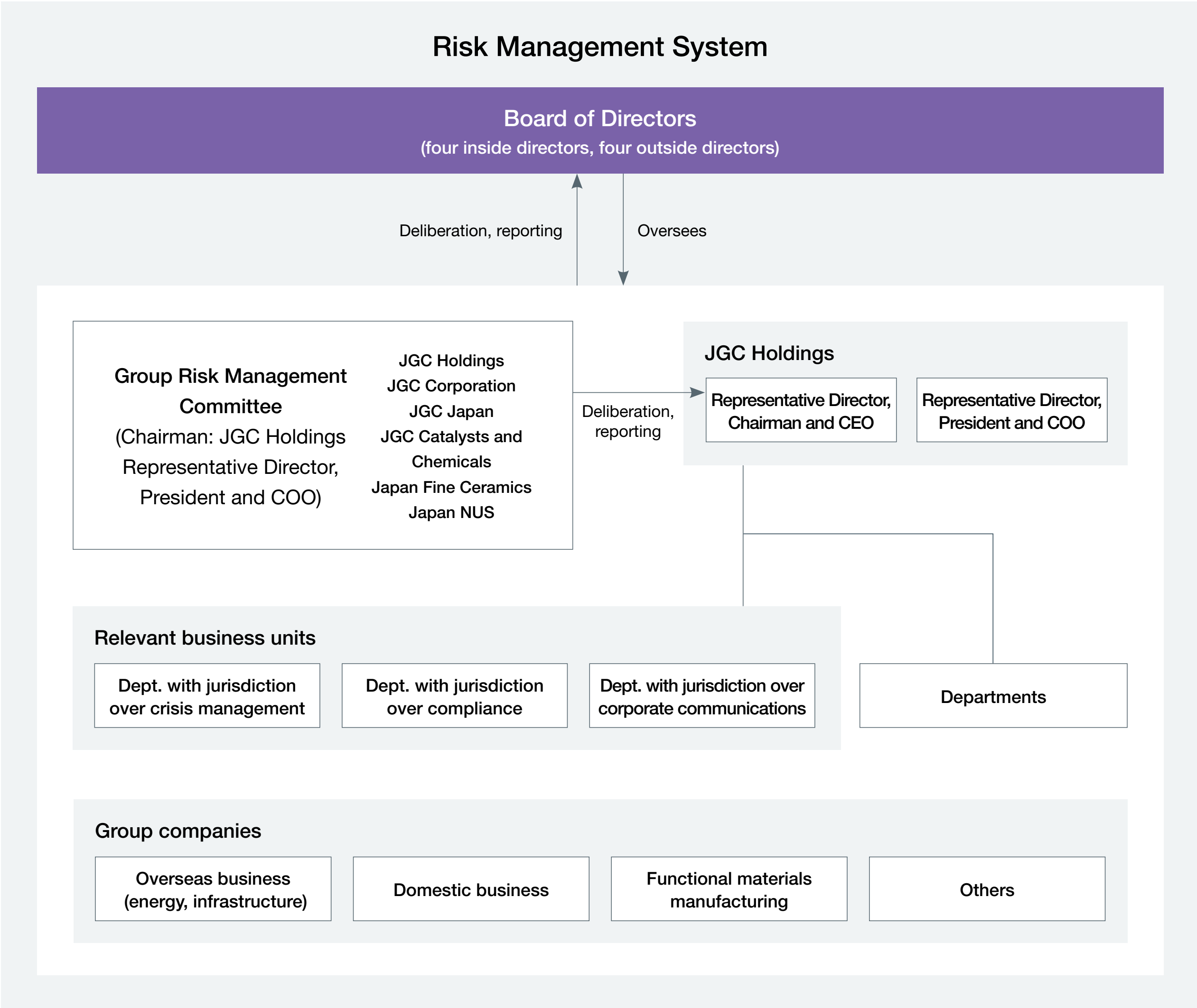
Risk Management

Basic stance

Recognizing that appropriate risk management reduces losses and contributes to profits for the Group, we strive to reduce and prevent risks routinely by understanding and organizing risks posed to the Group as a whole and by building, maintaining, and refining our risk management system. If risks do materialize, we respond rapidly and appropriately to minimize the impact and associated loss.

Risk management system

Based on the Group Risk Management Committee rules, the JGC Group has established and uses a comprehensive risk management system for a systematic understanding of the risks posed to the Group as a whole. We are committed to further reducing these risks. Management of business risks of the Group is mainly carried out by each operating company, with significant individual risks reported to the holding company Board and discussed as necessary.



Primary Group risks and responses

Primary Risk Area	Nature of Typical Risks	Countermeasures
Risk associated with receiving and executing projects	• Change of plans, cancellation, suspension, or postponement of projects in Total engineering business after orders are received • Worsening financial conditions of joint venture consortium partners as comprehensive engineering projects are executed	• Specific risk analysis by the holding company and operating companies, monitoring of project progress and profitability
Country risk	• Impact on business activities from political instability, war, revolution, domestic conflict, terrorism, sudden changes in economic policies or conditions, or economic sanctions	• Use of trade insurance • Gathering information on country risk • Setting reasonable contract conditions with clients, addressing force majeure clauses and regulatory changes • Strengthening crisis management functions by the Crisis Management Dept.
Risk associated with natural disasters, epidemics, etc.	• Impact on business activities from natural disasters of unforeseen magnitude such as earthquakes, torrential rain, or typhoons, or from global pandemics such as new strains of influenza	• Establishing disaster response procedures, introducing systems to confirm safety, and implementing disaster training • Gathering information on risk • Taking necessary measures in response to official requests, confirming safety in accordance with national conditions and regulations • Setting reasonable contract conditions with clients, addressing force majeure clauses and regulatory changes • Requesting and discussing with clients any necessary rescheduling or rebudgeting
Foreign exchange volatility risk	• Impact on sales and profit / loss from sharp fluctuations in foreign exchange rates	• Using project contracts denominated in multiple currencies, using overseas procurement • Issuing orders denominated in foreign currencies, using forward foreign exchange agreements
Risk of construction worker shortages, substantial wage increases	• Impact on business activities in Total engineering business from shortages of construction workers or substantial increases in wages	• Monitoring and forecasting trends in the construction industry labor force for primary plant markets • Adopting modular construction techniques to minimize on-site construction • Working with companies that have extensive track records in local construction
Risk of substantial increases in material and equipment costs	• Increased procurement and transport costs for material and equipment in Total engineering business • Substantial rises in prices of raw materials or fuel in Functional materials manufacturing	• Monitoring and forecasting price trends, ongoing efforts to improve forecast accuracy • Placing orders for materials and equipment early on • Diversifying suppliers • Addressing this risk in contracts
Investment risk	• Loss from unforeseen circumstances in the investment environment • Inability to withdraw from investments at the preferred time or in the preferred manner, due to low liquidity or similar factors	• Clarifying the significance and purpose of new investment, and making decisions after deliberation by the Board or committees • Careful selection of new investments
Legal and regulatory risk	• Restrictions under business laws and regulations such as tax or construction laws, various domestic and international environmental laws, import/export trade regulations including those for security purposes, various laws and regulations to prevent corruption such as graft, laws and principles on human rights protection, or business or investment licenses	• Developing, implementing, monitoring, and improving compliance programs and Group policies and rules
Information security risk	• Leaks and loss of information from power outages, disasters, failure, loss, or theft of host computers, servers, or network equipment, external attacks, or virus infections	• Security measures such as preventing intrusion by establishing information security policies, adopting antivirus measures, and using encryption
Risk associated with quality	• Poor quality of supplies or items procured, recall of delivered products due to defects, liability for damages	• Promoting quality management system activities by establishing organizations with jurisdiction over quality assurance • Using product liability insurance
Risk associated with changes in the macroeconomic environment and social and international affairs	• Impact on business activities from fluctuating energy prices linked to global recessions	• Diversifying our business portfolio by shifting to a Group management structure • Developing technologies to reduce environmental impact • Building value chains in collaboration with other companies that possess advanced technologies
Risk associated with climate change	• Natural disasters at construction and manufacturing sites • Impact on business activities from lower fossil fuel-related investment by clients, or from similar changes to client business itself • Changes in the business environment, including social and industrial changes caused by the COVID-19 pandemic	• Receiving and executing non-fossil fuel, circular economy, and renewable energy projects • Transforming business areas, business models, and the Group's internal organization in line with the 2040 Vision, our long-term management vision

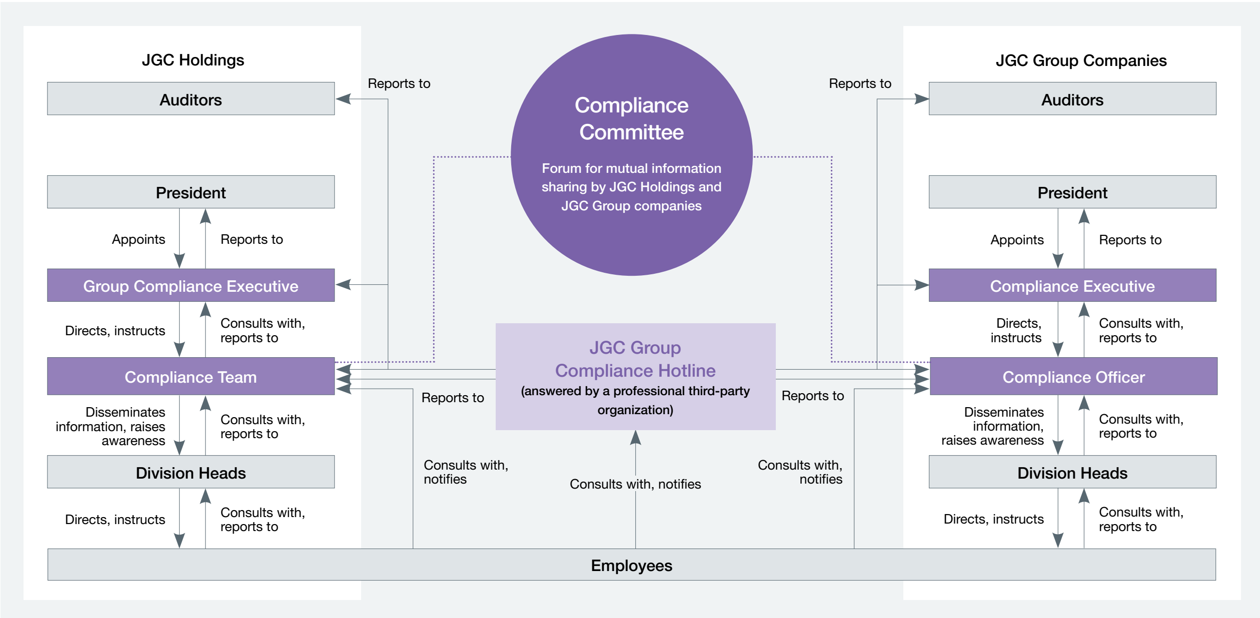
Compliance

Basic stance

Guided by our sense of purpose and values representing our corporate philosophy, we view compliance as the cornerstone of management, based on two keywords in a list of shared values—respect and integrity. As a member of the international community, the JGC Group believes that compliance with the laws of Japan and all other countries where the Group operates, as well as fair and equitable business practices in accordance with corporate ethics, are essential to the pursuit of sustainable business development. Based on this belief, the Group has developed the JGC Group Code of Business Conduct. The code, which must be followed by all employees, contains key points to ensure that the JGC Group's corporate philosophy is implemented in practice.

Group compliance system

The JGC Group has established a Group compliance system to ensure each company carries out its business based on high ethical standards. Compliance executives assigned to each main Group company work with compliance officers under their supervision to evaluate risks faced by the company and implement suitable measures. The JGC Group has also established the Compliance Committee as a forum to share information and collaborate among Group companies. We are aiming to achieve a sense of unity to the entire Group through the Committee. The Compliance Team at JGC Holdings Corporation is in charge of comprehensive measures, coordination, and other functions to promote Group-wide compliance.



Measures to prevent bribery

The JGC Group follows a basic policy of complying with all anti-bribery rules and regulations, such as provisions in Japan's Unfair Competition Prevention Law prohibiting the bribing of foreign public officials, the US Foreign Corrupt Practices Act (FCPA), and the UK Bribery Act 2010. Group rules on preventing bribery, based on our corporate philosophy and Code of Business Conduct, are summarized in the following table.

Under these anti-corruption programs, the agents, consultants, vendors, subcontractors, joint ventures, and others who intend to do business with the JGC Group are screened to ensure compliance. The results enable us to implement any necessary risk-based measures, such as stipulating strict anti-corruption clauses in contracts with business partners. Any gifts, entertainment, donations, or contributions must be approved in advance, so that we are aware of transactions that may be linked to corruption.

Compliance is also monitored to ensure implementation of anti-bribery programs at Group companies. Each year, members of the Compliance Team of JGC Holdings visit several Group companies. Executives and employees are interviewed and records audited to identify issues and make improvements.

JGC Group Corporate Philosophy

JGC Group Code of Business Conduct

Bribery Prevention Regulations

Regulations to prevent bribery by employees	Regulations to prevent bribery by business partners	Regulations to ensure effective operation of bribery prevention programs
Gifts, entertainment, and travel policy	Anti-corruption policy for commercial representative	Rules related to the JGC Group Compliance Hotline
Policy on charitable donations	Anti-corruption policy for joint ventures	Bribery risk management guidelines
Policy on political contributions	Anti-corruption policy for suppliers and subcontractors	Bribery prevention training guidelines
		Compliance monitoring guidelines

Compliance training

Awareness of compliance is enhanced through thematic and level-specific compliance training programs. Beginning, intermediate, or advanced training is given for all JGC group employees when they are promoted. Beyond compliance basics, the training features case studies and encourages each employee to view matters of compliance as personally relevant. Since fiscal 2021, a compliance training for general manager on responsibilities and preparedness as a compliance leader in their division was newly started.

Training is also conducted on specific topics, such as preventing corruption, dealing with harassment, or complying with subcontracting laws. For those involved in projects, other training addresses local compliance risks. In addition to these training programs organized by the head office, some domestic and overseas Group companies also conduct their own training programs for anticipated risks.

Courses and participation

	Fiscal 2021
Number of courses	27
Number of participants	846

* Figures represent the number of days the training was held.

Training courses in fiscal 2021

Type of training	Course	Participants
Level-specific	New employee training	New employees of domestic Group companies
	Basic compliance training	Newly appointed assistant managers of domestic Group companies
	Intermediate compliance training	Newly appointed section managers of domestic Group companies
	Advanced compliance training	Newly appointed general managers and managers of domestic Group companies
	Compliance training for general manager	General managers at JGC Holdings, JGC Corporation, and JGC Japan
Thematic	Project compliance training	Members involved in projects
	Anti-harassment training	Group employees in Japan (applies only to specific departments and positions)
	Risk-specific compliance training (anti-corruption, subcontracting and anti-monopoly laws, and other risks)	JGC Japan employees at domestic sites or regional offices

Compliance hotline

For prompt identification and prevention of compliance risks, the JGC Group Compliance Hotline was established as a resource that employees can use without hesitation to seek advice or report any concerns about actual or potential violations. Calls are answered by a third-party organization, which also enables anonymous consultation and reporting. The hotline is supplemented by internal lines at the two main operating companies, JGC Corporation and JGC Japan, to provide direct lines for consultation and reporting, which enables faster investigation and response. Offering several ways to seek advice and report suspicions provides a more convenient environment for employees to receive assistance. In addition to accepting reports from employees, we also accept reports of violation of corporate ethics from all suppliers working with Group companies.

* Number of reports received by hotlines is shown on p. 87.

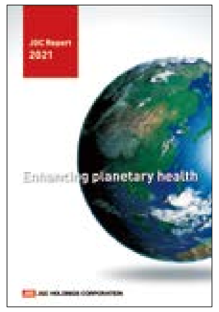
Stakeholder Engagement

Basic stance

Attentive communication reflects our belief that broad engagement with our diverse stakeholders is essential to sustained growth and higher corporate value. By providing regular feedback from shareholders and investors to management and relevant departments, applying this knowledge in management strategies, and diligently disclosing both financial and non-financial information, we create a forum for a consistent, long-range understanding of our management policies.

Shareholder and investor engagement

Enhancements to the JGC Report (Integrated Report)

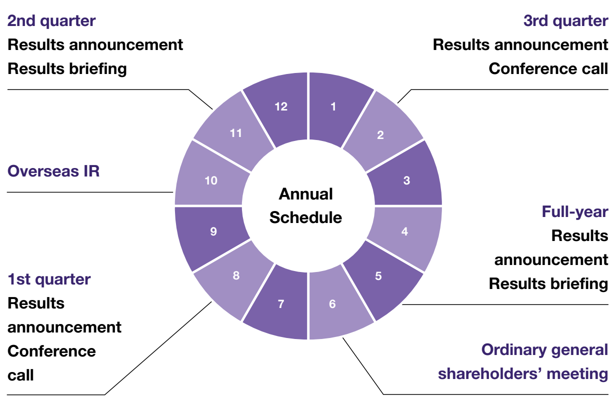


More informative each year, the JGC Report serves a key role in disclosure for long-term investment decisions. A variety of shareholder and investor opinions were addressed in the 2021 JGC Report, which discussed the background, goals, and specific strategies of the announced 2040 Vision and BSP 2025 through carefully designed page layouts and sections providing a clearer understanding of JGC Group strategy. Investor interest in how the Group was able to develop such strategies as the 2040 Vision and BSP 2025 was met with a compelling retrospective on the value-creation mechanism that the Group has cultivated from the start to expand and grow, demonstrating how the vision and plans are consistent with our corporate history. This expanded coverage of non-financial information was recognized by domestic equity investment managers of the Government Pension Investment Fund (GPIF) with a Most-Improved Integrated Report award in 2021.

Online earnings release conferences

Online conferences are held to provide a more in-depth understanding of our business activities. Designed to be informative for shareholders and investors, the conferences covered two topics of particular interest by providing an LNG market outlook from an EPC contractor perspective and reporting on the status of sustainability-oriented business development. We will continue to ensure that shareholders, investors, and many other stakeholders are well informed of our business.

IR activities schedule



Main IR activities

Activity	No. of events	No. of companies
Responses to requests for information, phone calls from institutional investors in Japan / overseas	194	96
Results briefing conference calls	2	50
Results briefings by senior management	2	62
ESG-related meetings	12	12
Overseas IR roadshows by senior management*	0	0
Business activities briefing conference	1	35

* Suspended during fiscal 2021 due to the pandemic.

Ordinary General Shareholders' Meetings

	Fiscal 2020	Fiscal 2021	Fiscal 2022
Date held	June 26 (Fri)	June 29 (Tue)	June 29 (Wed)
Shareholders attending	15*	19*	32*
Ratio of voting rights exercised	84.0%	84.2%	87.1%

* From fiscal 2020 to 2022, we asked shareholders to avoid attending the meeting at the venue as much as possible, as part of measures to prevent the spread of COVID-19.

Employee engagement

Dialogue with top management, quarterly newsletter, and more

Internally, ties are strengthened at executive-employee roundtables where people speak freely and share in our vision. These meetings are featured on a JGC Group video channel that encourages a vibrant corporate culture. Knowledge of management policies and issues is shared across the Company through a variety of media such as newsletters and Company-wide bulletin boards, part of communication that fosters a sense of belonging among employees.

Client engagement

HR training programs in resource-rich countries

Over the past few decades, the JGC Group has held training programs for engineers and students of chemical engineering and similar disciplines in efforts to strengthen ties with resource-rich countries. Many past participants have later contributed to domestic resource development and industrial growth. Expanded JGC business in these countries is another outcome of trainees' understanding of our business, technical expertise, and corporate stance.

Supplier engagement

Supporting vendors with technical assistance

The JGC Group actively promotes domestic procurement where plants are built, and when sophisticated equipment is ordered, our engineers may go on-site to provide technical assistance tailored to local vendors' expertise and facilities. Viewing these close ties as an asset, we take the initiative in providing technical assistance to vendors.

Training for welders

Community engagement

Initiatives for Basra elementary students

Academic decline in postwar Iraq has been significant, and educational investment has not kept pace with the growing population of young Iraqis in Basra Province and elsewhere. Unemployment also remains high among young people, with jobs scarce even for university graduates. In a long-term commitment consistent with national needs, the JGC Group launched JGC Code Education in March 2022, to teach computational thinking at local elementary schools. The project provides educational experiences for children and creates youth employment opportunities. Nearly 20,000 students will have opportunities to learn programming concepts over the next two years, as we foster future IT professionals in Iraq while addressing youth employment. Additionally, science shows held on June 5 and 6 this year targeted some 2,600 students at about 20 Basra elementary schools.

JGC Code Education participants

Company visits from Yokohama high schools

The JGC Group hosts company visits by Yokohama high school students. Here, talks with employees and student VR experiences encourage communication. Besides helping students gain a clearer understanding of work, another goal is to foster the ability to choose one's own career path. In fiscal 2022, the program also raised awareness of our efforts toward sustainability, as students learned about JGC sustainable aviation fuel (SAF) initiatives.

Chemistry workshops for elementary students

Each year at its Kitakyushu facility, JGC C&C has held workshops with chemistry experiments for local elementary students. For a functional materials manufacturer, this represents a meaningful way to interact with and contribute to the community. JGC C&C will continue to kindle an interest in chemistry through these opportunities, which also educate people about their business activities. We will continue to build positive engagement with the community.

An experiment at a chemistry workshop

Results of Value Creation

The JGC Group's value-creation mechanism creates economic, social, and environmental value while supporting our sustained growth, with outcomes gauged and evaluated through financial and non-financial metrics. Here, we present business results for fiscal 2021 and chronicle this value creation.

Financial Highlights

JGC HOLDINGS CORPORATION and its consolidated subsidiaries*1

(Millions of yen)

Years ended March 31	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Performance Highlights										
Net Sales	624,637	675,821	799,076	879,954	693,152	722,987	619,241	480,809	433,970	428,401
Operating Income (Loss)	64,123	68,253	29,740	49,661	(21,496)	21,495	23,249	20,234	22,880	20,688
Net Income (Loss) Attributable to Owners of the Parent*2	46,179	47,178	20,628	42,793	(22,057)	16,589	24,005	4,117	5,141	(35,551)
New Contracts	594,091	818,161	769,680	320,626	506,293	547,826	935,451	189,643	683,068	315,956
Outstanding Contracts	1,549,813	1,767,814	1,772,036	1,192,625	1,045,684	846,157	1,208,365	941,618	1,241,204	1,215,911
Financial Position at Year-End										
Total Current Assets	460,231	575,886	533,538	522,747	480,865	521,320	541,747	537,955	548,359	533,343
Total Current Liabilities	262,439	333,353	286,533	225,203	226,457	215,773	223,559	228,386	197,055	253,836
Working Capital	197,792	242,533	247,005	297,544	254,408	317,200	318,188	309,569	351,304	279,507
Net Property, Plant and Equipment	71,708	70,290	78,560	76,255	69,877	55,222	55,440	49,794	66,654	69,354
Total Assets	628,757	746,102	719,754	689,782	646,291	684,921	708,855	671,273	702,529	694,274
Long-Term Loans Payable	9,363	13,001	22,715	20,991	12,631	4,294	3,949	347	16,783	11,496
Total Net Assets	336,083	379,882	388,496	419,673	383,260	395,779	410,350	390,979	417,616	387,662
Shareholders' Equity	335,534	374,654	387,480	418,695	382,215	394,701	409,254	390,516	417,120	387,145
Cash Flows										
Cash Flows from Operating Activities	85,010	120,576	(71,416)	(49,764)	(28,884)	5,539	(55,259)	92,442	12,467	19,311
Cash Flows from Investing Activities	(28,370)	(18,728)	(23,411)	8,696	(12,979)	11,736	(4,662)	19,364	(13,520)	(7,695)
Cash Flows from Financing Activities	(3,695)	(10,687)	3,836	(4,374)	(19,674)	33,781	(13,878)	(7,699)	196	(148)
Cash and Cash Equivalents at End of Year	284,777	385,252	297,707	247,947	185,603	235,394	160,841	261,898	268,281	288,009
Financial Highlights*3										
Return on Assets (ROA) (%)	12.6	12.2	6.1	7.4	(2.3)	3.8	4.6	3.2	3.7	4.3
Return on Equity (ROE) (%)	14.8	13.3	5.4	10.6	(5.5)	4.3	6.0	1.0	1.3	(8.8)
Net Income (Loss) per Share (yen)	182.91	186.90	81.73	169.60	(87.42)	65.75	95.14	16.32	20.37	(140.77)
Cash Dividends per Share (yen)	45.5	46.5	21.0	42.5	30.0	25.0	28.5	12.0	12.0	15.0
Gross Profit Ratio (%)	13.5	13.1	6.6	8.3	0.2	6.2	7.3	9.0	10.1	10.6
Operating Income Ratio (%)	10.3	10.1	3.7	5.6	(3.1)	3.0	3.7	4.2	5.3	4.8
Equity Ratio (%)	53.4	50.2	53.8	60.7	59.1	57.6	57.7	58.2	59.4	55.8
Current Ratio (%)	175.4	172.8	186.2	232.1	212.3	241.6	242.3	235.5	278.2	210.1
Payout Ratio (%)	24.9	24.9	25.7	25.1	–	38.0	30.0	73.5	58.9	—
Number of Employees	6,721	7,005	7,332	7,489	7,554	7,610	7,841	7,607	7,371	7,275

*1 As of March 31, 2022, there were 21 consolidated subsidiaries.
*2 As a consequence of applying "Accounting Standard for Business Combinations" (ASBJ Statement No. 21, September 13, 2013), "Net income (loss)" is referred to as "Net income (loss) attributable to owners of the parent" from fiscal 2015 onward.
*3 The "Accounting Standard for Revenue Recognition" (ASBJ Statement No. 29, March 31, 2020) has been applied from the beginning of the current fiscal year.

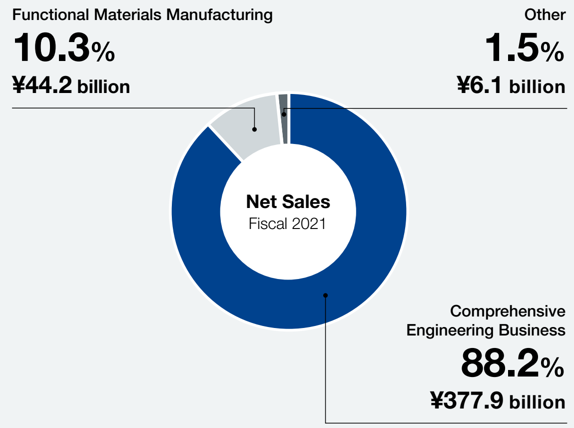
ESG Data Highlights

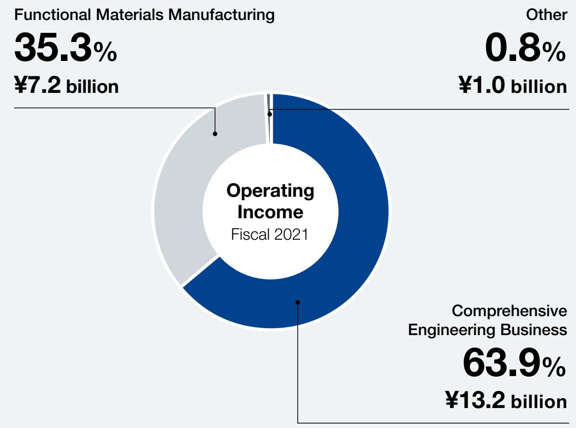
	JGC's main KPIs	Units	Fiscal 2017	Fiscal 2018	Fiscal 2019	Fiscal 2020	Fiscal 2021*1
E Report on Environmental Initiatives							
Environment-related Initiatives • Contribution to environmental protection • Environmental improvement activities in line with our business • Promotion of the zero emissions initiative	Scope 1 and 2 GHG emissions*2	t	—	—	—	132,546	133,573
	Industrial waste recycling rate (Domestic construction sites)	%	97.7	96.1	85.2	88.3	98.4
	Number of incidents of leaks of hazardous substances, etc. (Domestic and overseas construction sites)	Incidents	1	0	0	0	0
	Energy-related CO_2 emissions (Domestic construction sites)	$kgCO_2$/hour	3.52	2.39	0.61	0.40	1.91
	Rate of diffusion of electronic manifests	%	64.2	79.5	69.5	85.9	93.9
	Energy consumption (Yokohama Head Office)*3	Crude oil equivalent (kl)	2,248	2,224	2,139	2,091	2,022
	Yokohama Head Office power consumption	1,000 kWh	5,571	5,497	5,221	4,756	4,658
	Consumption of chilled water by Yokohama Head Office	1,000 MJ	14,071	15,353	15,503	14,349	13,327
	Consumption of steam by Yokohama Head Office	1,000 MJ	9,153	7,724	7,170	10,377	9,963
	Volume of waste disposed by Yokohama Head Office	1,000 kg	212	206	191	109	99
	Rate of recycling of waste by Yokohama Head Office	%	65.7	61.4	59.5	65.5	59.2
S Report on Social Initiatives							
Initiatives related to human rights and labor practices • Promotion of diversity • Support for realization of work–life balance • Support for employee career formation	Number of women in management positions	Persons	19	21	26	30	35
	Ratio of women in managerial positions	%	—	—	2.2	2.5	2.8
	Rate of employment of people with disabilities	%	1.82	1.87	1.97	2.27	1.72
	Number of re-employed employees*4	Persons	159	109	55	55	13
	Number of non-Japanese employees*4	Persons	100	89	86	95	93
	Number of employees taking childcare leave (Male)	Persons	8	11	14	40	43
	Number of female employees taking childcare leave (Rate of reinstatement of female employees taking childcare leave)	Persons (%)	24 (100)	24 (100)	19 (100)	27 (100)	27 (100)
	Number of employees taking spousal childbirth leave	Persons	81	64	80	91	87
	Number of employees taking sick or injured childcare leave	Persons	123	185	187	217	167
	Number of employees taking nursing care leave	Persons	20	22	11	42	33
	Number of employees taking temporary retirement for nursing care	Persons	1	0	0	1	0
	Number of employees working reduced hours for childcare	Persons	42	51	47	47	44
	Number of employees working reduced hours for nursing care	Persons	2	0	0	0	0
	Rate of utilization of annual leave	%	57	53	59	60.75	60.95
	Number of employees dispatched for on-site training / on-site instruction	Persons	72	86	45	55	88
	Total annual training	Hours	–	–	–	–	57,877
	Training per person	Hours	–	–	–	–	18
	Number of employees dispatched to overseas companies, etc.	Persons	5	2	4	4	1
Initiatives related to health and safety • Fostering of culture of health and safety • HSSE leadership by top management • Enhancement of HSSE management system for investment projects • Ongoing implementation of traffic safety measures • Further development of in-house health and safety education • Enhancement of Head Office construction HSSE functions	Total project working hours	1,000 hours	81,072	90,993	56,478	40,861	50,051
	Number of fatal accidents	Accidents	2	0	0	1	0
	Number of accidents accompanied by lost work time	Accidents	9	8	7	7	8
	Number of restrictions on work	Restrictions	6	11	18	15	11
	Number of conditions requiring specialized treatment	Conditions	41	31	46	46	31
	Rate of frequency of accidents accompanied by lost work time*5		0.022	0.018	0.025	0.034	0.032
	Rate of frequency of recordable accidents*6		0.14	0.11	0.25	0.34	0.20
G Report on Governance							
Initiatives related to fair business practices • Realization of increased compliance awareness	Number of times compliance training implemented / Number of employees receiving compliance training	Times (People)	13 (353)	6 (199)	21 (559)	19 (1,856)	27 (846)
Number of reports received by hotlines		Numbers	18	28	47	44	49
Initiatives related to the promotion of information security • Information management awareness verification surveys and voluntary inspections • Drills against targeted threats	Number of serious information security-related incidents	Incidents	0	0	1*7	0	0
Reinforcement of governance system	Number of outside directors	Persons	2	2	3	4	4

*1 Applies to JGC Holdings, JGC, and JGC Japan combined.
*2 Also includes JGC C&C, Japan Fine Ceramics, and Japan NUS.
*3 Energy consumption (Yokohama Head Office): Reduction target set so that an average annual reduction of 1% over the past five years can be achieved.
*4 Number of re-employed employees and number of non-Japanese employees = (Number of employees in April + Number of employees in March) ÷ 2
*5 Rate of frequency of accidents accompanied by lost work time = Number of accidents accompanied by lost work time × 200,000 ÷ Total project working hours
*6 Rate of frequency of recordable accidents = (Number of fatal accidents + Number of accidents accompanied by lost work time + Number of restrictions on work + Number of conditions requiring specialized treatment) × 200,000 ÷ Total project working hours
*7 Number of serious information security-related incidents: 1 (Emails sent to external parties due to unauthorized access)
Corrective measures for the above incident: introduction of measures to prevent unauthorized access through two-factor authentication

Results of Value Creation

Consolidated Segment Information





Total Engineering Business

Focused on Total engineering business activities including design, procurement, construction, and commissioning of facilities and plants used for petroleum and petroleum refining, petrochemicals, gas, LNG, chemicals, nuclear energy, metal refining, biochemicals, food, pharmaceuticals, healthcare, logistics, information technology, environmental protection, and pollution control.

Functional Materials Manufacturing Business

Focused on manufacturing and sales of products in the fields of catalysts, nanoparticle technology, hygiene and safety, electronic materials, high-performance ceramics, and next-generation energy.

Other Business

Includes consulting, office support, desalination, and oil & gas production and sales.

Completed Construction by Region

(Millions of yen)

Japan	Southeast Asia	Middle East	Africa	North America	Other	Total
137,426	33,154	50,230	60,111	138,394	9,083	428,401

Based on client location and classified by country or region.

Operational Review: Total Engineering Business

Overseas Sector

New Contracts in Fiscal 2021	New Contracts Targeted for Fiscal 2022
Approx. ¥145 billion	¥670 billion

Farhan Mujib
Representative Director,
President,
JGC CORPORATION

Energy Solutions

Covered Sectors

Engineering, procurement, and construction of plants and facilities in sectors such as liquefied natural gas (LNG), Carbon Capture and Storage (CCS), refinery, chemicals, gas processing, crude oil and gas gathering, non-ferrous metal smelting, hydrogen, fuel ammonia, nuclear energy, etc.

Growth Opportunities	• Increasing energy demand, driven in part by global population growth • Increasing energy demand from a recovery in consumer spending • Higher demand for LNG and other transitional energy sources, driven by decoupling from Russia • Expanded use of hydrogen, fuel ammonia, and nuclear energy
Medium- to Long-term Risks	• Lower demand for fossil fuels as a whole • Escalation in material costs, transport, and the like, stemming from conflict in Ukraine • Capacity / skilled labor shortages as more projects begin

Business Policy

Fiscal 2021 saw some global economic recovery as progress was made in vaccination, but variant outbreaks made this recovery uneven, and the market environment remained uncertain. In response, our focus on projects that were expected to move ahead enabled us to receive orders for Malaysian FLNG facility FEED services, Saudi Dew Point Control Unit project, and other projects. Meanwhile, an Azerbaijani feasibility study on developing facilities and infrastructure for solar- and wind-powered green hydrogen and ammonia production was part of more intensive efforts toward a low-carbon / decarbonized society.

In fiscal 2022, importance of LNG has been increased not only because of transitional energy sources for a low-carbon future but because energy has been in short supply since the Ukraine crisis prompted a decoupling from Russia. These and other factors are expected to create more LNG projects, which are among opportunities we will pursue in North America and Southeast Asia as we continue to evaluate the risks involved, including higher material, equipment, and transport costs. As before, business opportunities for technologies that support sustainability in applications such as hydrogen / fuel ammonia will also be actively pursued by the Group.

Facility Infrastructure Solutions

Covered Sectors

Engineering, procurement, and construction of infrastructure facilities focused on renewable energy power generation (solar, biomass, wind), battery energy storage, LNG / LPG terminals, waste power generation, pharmaceuticals and food factories, hospitals, airports, transportation infrastructure, water treatment, etc.

Growth Opportunities	• Increasing demand for new infrastructure, as populations in emerging markets grow • Increasing demand for renewable energy, toward a low-carbon / decarbonized society
Medium- to Long-term Risks	• Sluggish capital investment from an economic slowdown in emerging markets • Escalation in material costs, transport, and the like, stemming from conflict in Ukraine • Capacity / skilled labor shortages as more projects begin

Business Policy

Although the business environment remained uncertain in fiscal 2021 from repercussions of the pandemic, market conditions gradually improved. Energy demand recovered in the second half of the year, and against the background of decarbonization in Asia and elsewhere, renewable energy and industrial infrastructure investment picked up. This set the scene for the Group to secure orders in Asia and beyond, for construction projects including a Philippines mega solar power plant, industrial park infrastructure in Bangladesh, and a Malaysian contact lens manufacturing plant. To meet fiscal 2022 targets, we are working to receive orders for mega solar projects in the Middle East, an array of industrial park infrastructure in Asia, and other projects.

Looking ahead, energy and infrastructure demand is likely to keep expanding, driven by emerging-economy population and economic growth in Asia and elsewhere, with decarbonization needs. We anticipate steady implementation of capital investment plans. January 2022 saw the establishment of a new regional headquarters in Singapore in efforts to reinforce our Asia-Pacific sales and project execution network. We will continue to strengthen our involvement in this region, as we take our signature, account-focused approach to expand orders.

Domestic Sector

Shoji Yamada
Representative Director, President, JGC JAPAN CORPORATION

New Contracts in Fiscal 2021	New Contracts Targeted for Fiscal 2022
Approx. ¥170.8 billion	¥170 billion

Covered Sectors

Engineering, procurement, construction, and maintenance of plants and facilities for oil & gas, power generation, chemicals, pharmaceuticals and laboratories, health-care (medical and welfare), renewable energy power generation, hydrogen / fuel ammonia, resource recycling, nuclear energy-related, etc.

Growth Opportunities

- Increasing demand for maintenance as refining and petrochemical plants deteriorate
- Increasing demand for renewable energy and hydrogen / fuel ammonia, toward a decarbonized society
- Increased capital investment in life sciences from a declining birthrate and aging population
- Increasing demand for smart factories in concert with factory automation

Medium- to Long-term Risks

- Sluggish investment in new energy, amid a lagging transition to decarbonization
- Less customer capital investment, due to global economic stagnation
- Escalation in material, transport, and other costs stemming from conflict in Ukraine

Business Policy

The domestic market in fiscal 2021 saw activity in renovation and maintenance for existing oil refineries as well as ongoing capital investment in infrastructure focused on life sciences, healthcare, and chemicals. In energy and chemicals, orders included maintenance of existing refineries, expansion of refrigeration oil raw material production capacity, and enlargement of polyethylene insulation production facilities. In the growth markets of life sciences and healthcare, construction contracts included an active pharmaceutical ingredient (API) manufacturing facility for small and mid-size molecule drugs, several hospitals, and a cosmetics plant. This enabled us to surpass our targets for domestic projects as a whole. A business transfer agreement was also concluded with IHI Plant Services Corporation, allowing us to acquire pharmaceutical plant EPC business.

In fiscal 2022, we intend to secure a number of orders focused on life sciences, healthcare, and decarbonization-related projects to meet our order target. These opportunities will allow us to leverage leading biotechnology, meet expected demand for renovation and remodeling of older hospitals, and participate in blue hydrogen and SAF projects, respectively.

Through CVC-funded investment in domestic and overseas start-ups, we will also take the initiative in entering new fields where greater demand is expected in Japan and actively promote digital transformation in maintenance and other areas.

Catalysts and Fine Chemicals Sector

Covered Sectors

Development and production of catalysts used in petroleum refining, chemical, and environmental conservation and of fine chemical products used as materials in semiconductor, IT / electronics, optics, cosmetics, and other applications

Toshiharu Hirai
Representative Director, President, JGC Catalysts and Chemicals Ltd.

Growth Opportunities

- Expanding demand for new chemical refining catalysts at petroleum refineries
- Increased demand for environmental catalysts and cosmetics ingredients made with silica beads, reflecting increased environmental awareness
- Increased demand for anti-reflective materials, semiconductor abrasives, and other functional coating materials from adoption of HDTVs and 5G technology

Medium- to Long-term Risks

- Declining demand for petroleum refining catalysts due to structural changes in energy
- Escalation in material costs, fuel prices and like, stemming from conflict in Ukraine

Oil Refining Catalysts (FCC Catalysts)

Business Policy

Fiscal 2021 brought a return to demand for oil refining catalysts domestically and overseas. As the global economy trended toward recovery amid widespread vaccination for COVID-19, refineries around the world operated at higher capacity to meet increased fuel demand. In fine chemicals, demand recovered for cosmetics materials, silica sol (a support material for auto-motive exhaust gas purification catalytic equipment)), and eyeglass coating materials. While monitoring global economic developments in fiscal 2022, in catalysts we will work to expand our domestic share and overseas business of FCC / chemical catalysts, as we develop clean energy materials for environmental catalyst applications and expand into new fields. In fine chemicals, our efforts will be focused on launching new silica sol polishing materials and expanding sales and applications for functional coating materials, cosmetic microbead alternatives, and optical materials.

Fine Ceramics Sector

Covered Sector

Development and production of ceramic materials for semiconductor, automotive, telecommunications, industrial, medical, and aerospace applications

Hiroshi Tanaka
Representative Director, President, Japan Fine Ceramics Co., Ltd.

Growth Opportunities

- Increased demand for parts used in optical communication and applications related to semiconductor production equipment, spurred by adoption of 5G
- Increased demand for high thermal conductivity silicon nitride substrates from adoption of EVs and HEVs

Medium- to Long-term Risks

- Escalation in material costs, fuel prices and like, stemming from conflict in Ukraine

High thermal conductivity silicon nitride substrates production plant which capital investment for further production increase was decided

Business Policy

Orders increased in fiscal 2021, mainly for parts used in semiconductor manufacturing, as demand for products in semiconductor applications grew on higher demand in these markets. Full-scale production and shipments of high thermal conductivity silicon nitride substrates for EVs and HEVs have also been underway since customer approval of samples from a new production plant that was completed in October 2020. We have decided to invest in facilities to increase further substrate production at the plant since the beginning of this fiscal year, among other efforts to strengthen this pillar of future earnings. Facility investment and personnel reinforcement for semiconductor production equipment parts and high thermal conductivity silicon nitride substrates will continue in fiscal 2022, as we seek more orders and even better quality. We also aim to acquire new customers for optical communication circuit boards and to enter new areas, as we pursue expanded fine ceramics sales.

Analysis of Performance and Financial Position

Overview of the business environment

Despite a trend toward global economic recovery during fiscal 2021 amid progress in COVID-19 vaccinations, recurrent variant outbreaks have meant that recovery has varied nationally and regionally. Meanwhile, other global trends such as responses to the UN Sustainable Development Goals (SDGs) and the Paris Agreement have made a major shift toward global decarbonization inevitable. As the fiscal year came to a close, conditions in Ukraine accelerated a rise in resource prices, leading to higher materials, equipment, and transport costs, among other repercussions.

The business environment remains uncertain, but energy demand has continued to recover since the second half of the current fiscal year in the markets served by the JGC Group's engineering, procurement, and construction (EPC) operations, consisting of the Energy Solutions Business (including oil refining, petrochemicals and chemicals, gas processing, liquefied natural gas (LNG), clean energy, and non-ferrous metal refining) and the Facility Infrastructure Solutions Business (including power generation, receiving terminals, pharmaceuticals, medical care, water treatment, and railways). Moreover, from an energy security standpoint, the importance of low-impact natural gas (including LNG) is growing. Oil- and gas-producing countries have also started making moves to resume capital investment plans. In the context of decarbonization in Asia and elsewhere, there was a gradual emergence of other positive signs, such as progress in renewable power generation and investment related to industrial infrastructure. The domestic market for this business saw activity in refinery renovation and maintenance, and there has been ongoing capital investment in infrastructure focused on life sciences, healthcare, and chemicals.

In the Functional Materials Manufacturing Business, catalysts and fine chemicals saw a recovery in product demand as the global economy trended toward recovery and domestic and overseas refineries operated at higher capacity as fuel demand increased. In fine ceramics, product demand rose overall as the global market for semiconductor applications remained brisk.

The JGC Group continued to monitor the ever-changing business environment, gathering information and taking steps against risk as needed, as we sought to prevent the spread of COVID-19 infection and remain cognizant of the safety of employees and other stakeholders as we conducted business.

Results of operations

In the current consolidated fiscal year, the JGC Group reported net sales of ¥428,401 million (down 1.3% year on year), operating income of ¥20,689 million (down 9.6% year on year), and net loss attributable to owners of the parent of ¥35,551 million. ROE was -8.8%.

Assets

Total current assets at the end of the current consolidated fiscal year were ¥533,344 million, a decrease of ¥15,015 million compared to the end of the previous fiscal year. This was mainly due to an increase of ¥19,878 million in cash and deposits, a decrease of ¥33,729 million in other current assets, and an increase of ¥3,386 million in allowance for doubtful accounts. Fixed assets totaled ¥160,931 million, an increase of ¥6,761 million from the end of the previous fiscal year. This was mainly due to an increase of ¥2,879 million in property, plant and equipment, an increase of ¥2,809 million in intangible assets, and an increase of ¥1,073 million in investments and other assets.

As a result, total assets amounted to ¥694,275 million, a decrease of ¥8,254 million compared to the end of the previous fiscal year.

Liabilities

Total current liabilities at the end of the current consolidated fiscal year were ¥253,837 million, an increase of ¥56,781 million compared to the end of the previous fiscal year. This was mainly due to a decrease of ¥3,205 million in reserve for losses on contracts, an increase of ¥21,481 million in notes and accounts payable, an increase of ¥40,239 million in short-term loans and current maturities of long-term debt, and an increase of ¥9,049 million in contract liabilities compared to the end of the previous fiscal year in advances received on uncompleted contracts. Total long-term liabilities amounted to ¥52,776 million, a decrease of ¥35,081 million compared to the end of the previous fiscal year. This was mainly due to a decrease of ¥35,288 million in long-term debt, less current maturities.

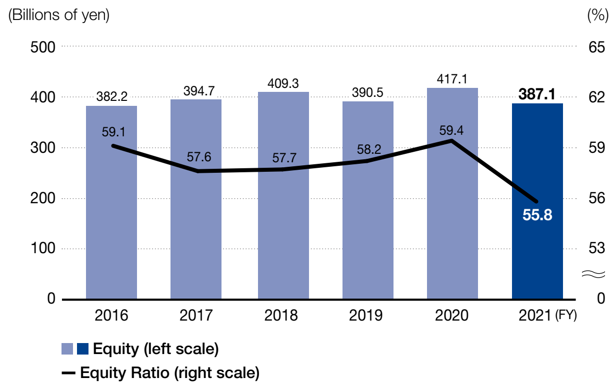
As a result, total liabilities amounted to ¥306,613 million, an increase of ¥21,700 million from the end of the previous fiscal year.

Net assets

Total net assets at the end of the current consolidated fiscal year were ¥387,662 million, a decrease of ¥29,954 million compared to the end of the previous fiscal year. This was mainly due to an increase of ¥3,821 million in foreign currency translation adjustments and the recording of ¥35,551 million in net loss attributable to owners of the parent.

As a result, the equity ratio was 55.8% compared with 59.4% at the end of the previous fiscal year.

Equity and Equity Ratio



Segment information

Total Engineering Business

In fiscal 2021, the JGC Group sought orders of ¥260 billion in the Energy Solutions Business, ¥80 billion in the Facility Infrastructure Solutions Business, and ¥160 billion in the domestic business, amounting to ¥500 billion. Intensive sales activities were conducted, focusing on viable projects, but in this second year of uncertainty, the higher material, equipment, and transport costs in some expected projects required more time for final client negotiations. This and other factors limited the amount of consolidated orders received to ¥315.9 billion.

In the Energy Solutions Business, orders included pre-Front-End Engineering Design (FEED) services for a floating LNG (FLNG) plant in Nigeria, FEED services for an FLNG plant in Malaysia, and EPC services for upgrading and modification of a natural gas liquid (NGL) plant in Saudi Arabia. A feasibility study*1 was conducted on development of facilities and infrastructure for green hydrogen and ammonia production using solar and wind power in Azerbaijan applying Japanese technology and expertise. This project also included formulation of a roadmap for large-scale production of green ammonia for power generation and export as well as development of domestic infrastructure.

In the Facility Infrastructure Solutions Business, we began to see results from sales activities to develop clients and coordinate and secure projects through a solutions-driven approach starting with conceptual design. Awarded contracts included EPC services for construction of a contact lens plant in Malaysia, industrial park infrastructure in Bangladesh, an LNG receiving terminal in Taiwan, and with JGC Philippines, a mega solar power plant in that country. A key strategy of our current medium-term business plan, "Building a Sustainable Planetary Infrastructure 2025 (BSP 2025)," is expanding growth markets and segments for EPC business, and to this end, JGC Asia Pacific Pte. Ltd. was established in Singapore on January 1 this year as part of efforts to reinforce our sales and project execution network in the Asia-Pacific region. To take on increasingly complex water infrastructure issues, the JGC Group also concluded a strategic partnership agreement in overseas water infrastructure with Nihon Suido Consultants Co., Ltd., which provides comprehensive water consultancy services.

In the domestic business, orders included refinery maintenance, EPC services for construction of a chemical products manufacturing plant, expansion of refrigeration oils' raw material production capacity, and expansion of polyethylene insulation production facilities. Healthcare and life sciences orders included EPC services for construction of an active pharmaceutical ingredient (API) plant for small and mid-size molecule drugs, construction of a nucleic acid pharmaceutical plant, and construction of several hospitals. The pharmaceutical plant EPC business was also acquired from IHI Plant Services Corporation through a business transfer agreement. At domestic plant construction sites, we began to verify the effectiveness of 3D printing in construction in anticipation of widespread introduction and, ultimately, digitalization of plant construction. The JGC Group also established a new ¥10 billion investment framework for start-ups in Japan and overseas. Within this framework, we established a ¥5 billion corporate venture capital (CVC) fund called the JGC Mirai Innovation Fund, managed with the independent venture capital firm Global Brain Corporation, which has invested in companies engaged in mesenchymal stem cell (MSC)-based regenerative medicine, digital therapeutics applying an original music therapy for stroke patients with gait disorders, advanced nuclear fusion technology, and measurement technology to understand wind direction and speed in three dimensions. In other pioneering

Fiscal 2021

	Total Engineering Business (Millions of yen)	Year-on-year Change (%)	Functional Materials Manufacturing Business (Millions of yen)	Year-on-year Change (%)	Other Businesses (Millions of yen)	Year-on-year Change (%)
Net Sales	377,995	(2.7)	44,251	8.7	6,155	32.1
Operating Profit	13,222	(21.4)	7,296	25.4	1,006	433.9

work, a pilot chemical plant jointly operated with Asahi Kasei Corporation began synthesizing "green" chemicals from a large-scale hydrogen production system,*2 and with Cosmo Oil Co., Ltd. and Revo International Inc., development is now underway to demonstrate and establish a domestic supply chain model for bio-jet fuel production from used cooking oil, with production and supply of next-generation sustainable aviation fuel (SAF) on a commercial scale.*3 A study on developing a regional low-carbon hydrogen model based on waste plastic gasification recycling in urban areas of Japan was undertaken with Iwatani Corporation and Toyota Tsusho Corporation,*4 while with Teijin Limited and the University of Tokyo, an industry–academia working group on building a sustainable textile industry ecosystem was launched. With Bridgestone Corporation, the National Institute of Advanced Industrial Science and Technology (AIST), Tohoku University, and ENEOS Corporation, joint research also began on chemical recycling technologies to produce isoprene, a raw material for synthetic rubber, from used tires.*5

*1 Selected by the METI in the 2021 feasibility study project for overseas development of high-quality energy infrastructure
*2 Selected as a NEDO Green Innovation Fund project: Hydrogen production through water electrolysis using power from renewables
*3 Selected as a NEDO Development of Production Technologies for Biojet Fuels project: Development of supply chain model through demonstration
*4 Selected as a NEDO Development of Technologies for Realizing a Hydrogen Society project: Development of regional hydrogen-energy utilization technology / Surveys and research on hydrogen production and utilization potential
*5 Selected as a NEDO Green Innovation Fund project: Development of technology for producing raw materials for plastics using CO_2 and other sources

Functional Materials Manufacturing Business

In catalysts, global economic improvement amid wider vaccination led to a rebound in demand for Fluid Catalytic Cracking (FCC) catalysts and others domestically and overseas as fuel demand gradually returned.

Demand also turned toward recovery in fine chemicals, as seen for silica sols used in hard disk polishing and as a support material in catalytic converters, functional coating materials, cosmetics materials, and optical materials.

Fine ceramics also saw increased demand, driven by greater demand for products used in semiconductor applications as demand in that market expanded. Production and shipments of high thermal conductivity silicon nitride substrates for electric and hybrid vehicles are fully underway, with customers having approved samples from a new mass production facility built in 2020. Expansion of the ceramics business was sought through a December 28, 2021, agreement with Showa Denko Materials Co., Ltd. to acquire the ceramics business. The transfer was intended to facilitate product development in growth segments (such as semiconductors and next-generation vehicles) by combining Showa Denko Materials' expertise in volume production and materials with the JGC Group's expertise in non-oxide ceramic materials and processing.

Cash flows

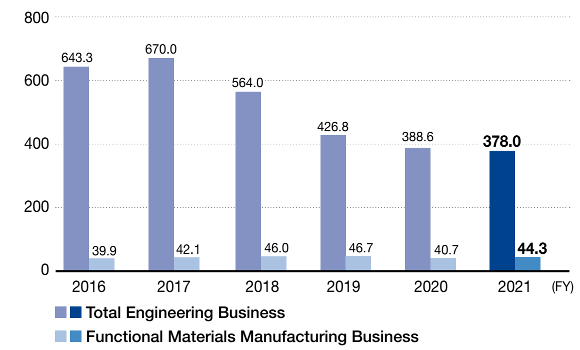
Current cash and cash equivalents (hereafter, "net cash") on a consolidated basis as of the end of the consolidated fiscal year stood at ¥288,009 million, a year-on-year increase of ¥19,728 million.

With regard to cash flows from operating activities, loss before taxes on income of ¥27,260 million and a decrease in accounts receivable–other are the major contributors to give a total of ¥19,312 million for the current fiscal year, compared to ¥12,467 million for the previous fiscal year.

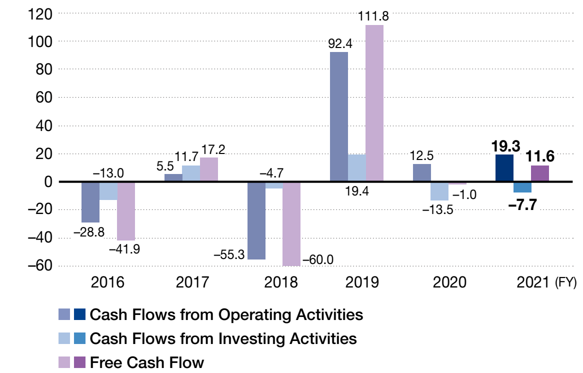
Cash flows from investing activities amounted to ¥7,695 million used in these activities, mainly due to payments for purchases of property, plant and equipment, compared to ¥13,521 million used in these activities in the previous fiscal year.

Cash flows used in financing activities amounted ¥149 million, mainly due to payment for dividends, compared to cash flows provided by financing activities of ¥197 million in the previous fiscal year.

Net Sales by Reportable Segment



Cash Flows



Analysis of new contracts

In the current consolidated fiscal year, orders received totaled ¥309,505 million.

The tables below provide a breakdown of new contracts in the Total Engineering Business by sector and region.

New Contracts by Business Sector

(Billions of yen)

Year ended March 31	2021	2021 (Percentage of new contracts)
Oil and gas development projects	41.3	6.0%
Petroleum refining projects	433.2	63.4%
LNG projects	36.8	5.4%
Chemical projects	23.3	3.4%
Power generation, nuclear power, and new energy	128.5	18.8%
Living and general production facility	9.9	1.5%
Environmental protection, social development, and IT	4.5	0.7%
Others	5.6	0.8%

(Billions of yen)

Year ended March 31	2022	2022 (Percentage of new contracts)
Energy Transition		
Oil and gas	92.9	30.0%
LNG	48.0	15.5%
Chemical	48.3	15.6%
Clean energy	28.6	9.2%
Others	2.6	0.8%
Healthcare & Life sciences	83.2	26.9%
Industrial & Urban infrastructure	5.7	1.8%
Others	0.2	0.2%

* The classification has been changed from the current fiscal year.

New Contracts by Region

(Billions of yen)

Years ended March 31	2021	2022	2022 (Percentage of new contracts)
Japan	182.1	170.9	54.1%
East and Southeast Asia	9.9	67.9	21.5%
Middle East	452.1	63.7	20.2%
Africa	17.3	2.0	0.6%
North America & Other	21.5	11.4	3.6%

Future outlook

Total Engineering Business

In the Energy Solutions Business, the business environment is likely to remain uncertain in view of the pandemic, higher prices for many resources due to tight supply and demand, and current conditions in Ukraine, which are accelerating the rise in resource prices. At the same time, Europe's natural gas supply and demand has been strained since the latter half of 2021, energy shortages have occurred, and as much of the world decouples from Russia, countries are diversifying suppliers. This has underscored the importance of natural gas and LNG as stable, transitional energy sources in the shift to a low-carbon or decarbonized society. We therefore expect resumed capital investment by clients who recognize the value of stable energy supplies over the medium to long term.

In the Facility Infrastructure Solutions Business as well, energy and infrastructure demand is likely to keep expanding, driven by population and economic growth in emerging economies and elsewhere, with the need for decarbonization as a background factor. We anticipate steady implementation of capital investment plans.

Client capital investment is also expected in the domestic sector, for maintenance at existing refineries, healthcare and life sciences projects, and decarbonization areas such as hydrogen.

We will continue to closely monitor emerging trends, such as the impact of the pandemic on performance, as manifested in issues such as construction delays in current projects, and the impact of higher material, equipment, and transport costs as affected by conditions in Ukraine.

Functional Materials Manufacturing Business

Turning to the Functional Materials Manufacturing Business, in catalysts, we will again seek a larger domestic market share for FCC catalysts and continue developing overseas operations, maintain our partnerships and improve profitability for hydrotreating catalysts, work to secure new chemical catalyst projects, and in environmental catalysts, develop materials for clean energy applications and expand into new fields. In fine chemicals, we will focus on launching new silica sol polishing materials, expanding functional coating material sales and applications, developing cosmetic microbead alternatives, and expanding optical material sales and applications.

In fine ceramics, we will work to acquire new clients for optical communication circuit boards and enter new fields, and through quality improvement, facility investment, and increased hiring, we will seek increased orders for products used in semiconductor applications and for silicon nitride substrates with high thermal conductivity.

We will continue to closely monitor emerging trends, such as the impact of the pandemic on this business, and the impact of higher raw material and fuel costs as affected by conditions in Ukraine.

Consolidated Balance Sheets

March 31, 2022 and 2021

The translation of the Japanese yen amounts into U.S. dollars is included solely for the convenience of readers outside Japan, using the prevailing exchange rate at March 31, 2022, which was ¥122.39 to U.S.$1.

	Millions of yen		Thousands of U.S. dollars
	2022	2021	2022
ASSETS			
CURRENT ASSETS:			
Cash and deposits	¥ 288,159	¥268,281	$2,354,433
Notes and accounts receivable	—	143,064	—
Notes receivable, trade receivables, contract assets and other	141,223	—	1,153,877
Inventories	37,031	32,968	302,566
Other current assets	70,493	104,222	575,970
Allowance for doubtful accounts	(3,562)	(176)	(29,104)
TOTAL CURRENT ASSETS	533,344	548,359	4,357,742
PROPERTY, PLANT AND EQUIPMENT:			
Land	18,617	18,553	152,112
Buildings and structures	74,182	61,504	606,112
Machinery and equipment	72,213	61,247	590,024
Construction in progress	803	17,836	6,561
Other	4,795	4,260	39,178
	170,610	163,400	1,393,987
Less accumulated depreciation	(101,076)	(96,745)	(825,852)
NET PROPERTY, PLANT AND EQUIPMENT	69,534	66,655	568,135
INTANGIBLE ASSETS	9,676	6,867	79,059
INVESTMENTS AND OTHER ASSETS:			
Investments in unconsolidated subsidiaries and affiliates	30,786	29,579	251,540
Investment securities	25,052	24,621	204,690
Long-term loans receivable	12	182	98
Deferred tax assets	13,558	15,532	110,777
Net defined benefit asset	1,507	860	12,313
Other	10,806	9,874	88,291
TOTAL INVESTMENTS AND OTHER ASSETS	81,721	80,648	667,709
TOTAL ASSETS	¥ 694,275	¥702,529	$5,672,645

	Millions of yen		Thousands of U.S. dollars
	2022	2021	2022
LIABILITIES AND NET ASSETS			
CURRENT LIABILITIES:			
Short-term loans and current maturities of long-term debt	¥ 40,828	¥ 589	$ 333,589
Notes and accounts payable	63,259	41,778	516,864
Contract liabilities	109,756	—	896,773
Advances received on uncompleted contracts	—	100,707	—
Reserve for job warranty costs	1,074	1,318	8,775
Reserve for losses on contracts	385	3,590	3,146
Income taxes payable	5,245	1,264	42,855
Other current liabilities	33,290	47,810	271,999
TOTAL CURRENT LIABILITIES	253,837	197,056	2,074,001
LONG-TERM LIABILITIES:			
Long-term debt, less current maturities	31,496	66,784	257,341
Net defined benefit liability	16,095	15,545	131,506
Deferred tax liabilities for land revaluation	1,015	1,015	8,293
Other long-term liabilities	4,170	4,513	34,071
TOTAL LONG-TERM LIABILITIES	52,776	87,857	431,211
TOTAL LIABILITIES	306,613	284,913	2,505,212
CONTINGENCIES			
NET ASSETS:			
SHAREHOLDERS' EQUITY			
Common stock			
Authorized 600,000,000 shares			
Issued 259,336,682 shares in 2022 259,214,827 shares in 2021	23,673	23,612	193,423
Capital surplus	25,771	25,710	210,565
Retained earnings	342,198	380,402	2,795,963
Treasury stock, at cost 6,750,140 shares in 2022 6,749,173 shares in 2021	(6,741)	(6,740)	(55,078)
TOTAL SHAREHOLDERS' EQUITY	384,901	422,984	3,144,873
ACCUMULATED OTHER COMPREHENSIVE INCOME			
Net unrealized holding gains on securities	6,312	5,571	51,573
Deferred gains on hedges	3,786	248	30,934
Revaluation reserve for land	(10,892)	(10,892)	(88,994)
Foreign currency translation adjustments	3,462	(359)	28,287
Remeasurements of defined benefit plans	(424)	(432)	(3,464)
TOTAL ACCUMULATED OTHER COMPREHENSIVE INCOME	2,244	(5,864)	18,336
NON-CONTROLLING INTERESTS	517	496	4,224
TOTAL NET ASSETS	387,662	417,616	3,167,433
TOTAL LIABILITIES AND NET ASSETS	¥694,275	¥702,529	$5,672,645

Consolidated Statements of Operations

Years ended March 31, 2022 and 2021

	Millions of yen		Thousands of U.S. dollars
	2022	2021	2022
NET SALES	¥428,401	¥433,970	$3,500,294
COST OF SALES	383,029	390,188	3,129,577
Gross profit	45,372	43,782	370,717
SELLING, GENERAL AND ADMINISTRATIVE EXPENSES	24,683	20,902	201,675
Operating income	20,689	22,880	169,042
OTHER INCOME (EXPENSES):			
Interest and dividend income	3,164	2,218	25,852
Interest expense	(419)	(180)	(3,423)
Gain on sales of investment securities	799	1,845	6,528
Gain on liquidation of subsidiaries and associates	180	—	1,471
Loss on impairment of fixed assets	—	(2,911)	—
Exchange gain (loss), net	2,528	(2,059)	20,655
Equity in earnings of affiliates	3,014	2,187	24,626
Loss on Ichthys LNG Project	(57,577)	—	(470,439)
Loss on devaluation of investment securities	(397)	(1,357)	(3,244)
Other, net	759	(179)	6,201
	(47,949)	(436)	(391,773)
Income (loss) before taxes on income	(27,260)	22,444	(222,731)
TAXES ON INCOME:			
Current	7,773	13,974	63,510
Deferred	464	3,262	3,791
NET INCOME (LOSS)	(35,497)	5,208	(290,032)
NET INCOME ATTRIBUTABLE TO NON-CONTROLLING INTERESTS	54	67	441
NET INCOME (LOSS) ATTRIBUTABLE TO OWNERS OF THE PARENT	¥ (35,551)	¥ 5,141	$ (290,473)

	Yen		U.S. dollars
	2022	2021	2022
AMOUNTS PER SHARE OF COMMON STOCK:			
Net income (loss)	¥(140.77)	¥20.37	$(1.15)
Cash dividends applicable to the year	¥ 15.00	¥12.00	$ 0.12

The Group has applied the "Accounting Standard for Revenue Recognition" from the beginning of the year ended March 31, 2022. As a result, for the year ended March 31, 2022, net loss per share decreased by ¥0.38 ($0.00).

Consolidated Statements of Comprehensive Income

Years ended March 31, 2022 and 2021

	Millions of yen		Thousands of U.S. dollars
	2022	2021	2022
NET INCOME (LOSS)	¥(35,497)	¥ 5,208	$(290,032)
OTHER COMPREHENSIVE INCOME			
Net unrealized holding gains on securities	653	3,330	5,336
Deferred gains on hedges	2,856	4,597	23,335
Translation adjustments	3,220	16,407	26,309
Remeasurements of defined benefit plans	(4)	1,058	(33)
Share of other comprehensive income of affiliates accounted for using equity method	1,411	(674)	11,529
TOTAL OTHER COMPREHENSIVE INCOME	¥ 8,136	¥24,718	$ 66,476
TOTAL COMPREHENSIVE INCOME	¥(27,361)	¥29,926	$(223,556)
COMPREHENSIVE INCOME ATTRIBUTABLE TO:			
Owners of the parent	¥(27,415)	¥29,859	$(223,997)
Non-controlling interests	¥ 54	¥ 67	$ 441

Results of Value Creation

Consolidated Statements of Changes in Net Assets

Years ended March 31, 2022 and 2021

	Common stock		Capital surplus	Retained earnings	Treasury stock, at cost	Net unrealized holding gains (losses) on securities	Deferred gains (losses) on hedges	Revaluation reserve for land	Foreign currency translation adjustments	Remeasurements of defined benefit plans	Non-controlling interests	Total net assets
	Shares	Amount										
	Thousands of shares	Millions of yen					Millions of yen					
Balance at April 1, 2020	259,111	¥23,555	¥25,653	¥375,641	¥(6,739)	¥2,206	¥(1,005)	¥(10,892)	¥(16,491)	¥(1,411)	¥463	¥390,980
Issuance of common stock	104	57	57									114
Net income attributable to owners of the parent				5,141								5,141
Cash dividends				(3,028)								(3,028)
Effect of change in scope of consolidation				1,642			(2,250)		(55)			(663)
Gain on disposal of treasury stock					(1)							(1)
Effect of change in scope of equity method accounting				1,006			(648)		(35)	(0)		323
Net changes in items other than shareholders' equity						3,365	4,151		16,222	979	33	24,750
Net changes during the year	104	57	57	4,761	(1)	3,365	1,253		16,132	979	33	26,636
Balance at March 31, 2021	259,215	¥23,612	¥25,710	¥380,402	¥(6,740)	¥5,571	¥ 248	¥(10,892)	¥ (359)	¥ (432)	¥496	¥417,616
Cumulative impact of changes in accounting policies				312								312
Restated balance	259,215	¥23,612	¥25,710	¥380,714	¥(6,740)	¥5,571	¥ 248	¥(10,892)	¥ (359)	¥ (432)	¥496	¥417,928
Issuance of common stock	122	61	61									122
Net loss attributable to owners of the parent				(35,551)								(35,551)
Cash dividends				(3,030)								(3,030)
Effect of change in scope of consolidation				65					(29)			36
Gain on disposal of treasury stock					(1)							(1)
Net changes in items other than shareholders' equity						741	3,538		3,850	8	21	8,158
Net changes during the year	122	61	61	(38,516)	(1)	741	3,538		3,821	8	21	(30,266)
Balance at March 31, 2022	259,337	¥23,673	¥25,771	¥342,198	¥(6,741)	¥6,312	¥ 3,786	¥(10,892)	¥ 3,462	¥ (424)	¥517	¥387,662

	Common stock	Capital surplus	Retained earnings	Treasury stock, at cost	Net unrealized holding gains on securities	Deferred gains on hedges	Revaluation reserve for land	Foreign currency translation adjustments	Remeasurements of defined benefit plans	Non-controlling interests	Total net assets
	Amount										
	Thousands of U.S. dollars					Thousands of U.S. dollars					
Balance at April 1, 2021	$192,924	$210,066	$3,108,113	$(55,070)	$45,518	$ 2,026	$(88,994)	$ (2,933)	$(3,530)	$4,053	$3,412,173
Cumulative impact of changes in accounting policies			2,549								2,549
Restated balance	$192,924	$210,066	$3,110,662	$(55,070)	$45,518	$ 2,026	$(88,994)	$ (2,933)	$(3,530)	$4,053	$3,414,722
Issuance of common stock	499	499									998
Net loss attributable to owners of the parent			(290,473)								(290,473)
Cash dividends			(24,757)								(24,757)
Effect of change in scope of consolidation			531					(237)			294
Gain on disposal of treasury stock				(8)							(8)
Net changes in items other than shareholders' equity					6,055	28,908		31,457	66	171	66,657
Net changes during the year	499	499	(314,699)	(8)	6,055	28,908		31,220	66	171	(247,289)
Balance at March 31, 2022	$193,423	$210,565	$2,795,963	$(55,078)	$51,573	$30,934	$(88,994)	$28,287	$(3,464)	$4,224	$3,167,433

Consolidated Statements of Cash Flows

Years ended March 31, 2022 and 2021

	Millions of yen		Thousands of U.S. dollars
	2022	2021	2022
CASH FLOWS FROM OPERATING ACTIVITIES:			
Income (loss) before taxes on income	¥ (27,260)	¥ 22,444	$ (222,731)
Adjustments to reconcile income (loss) before taxes on income to net cash provided by operating activities:			
Depreciation and amortization	7,203	6,432	58,853
Loss on impairment of fixed assets	—	2,911	—
Increase in allowance for doubtful accounts	3,712	99	30,329
Decrease in reserve for losses on contracts	(3,252)	(7,454)	(26,571)
Increase (decrease) in net defined benefit plans	353	(1,281)	2,884
Interest and dividend income	(3,164)	(2,218)	(25,852)
Interest expense	419	180	3,423
Exchange gain	(4,420)	(2,320)	(36,114)
Equity in earnings of affiliates	(3,014)	(2,187)	(24,626)
Gain on sales of investment securities	(799)	(1,845)	(6,528)
Loss on devaluation of investment securities	397	1,357	3,244
Decrease in notes receivable, trade receivables, contract assets and other	3,327	—	27,184
Decrease in notes and accounts receivable	—	3,451	—
(Increase) decrease in inventories	(3,743)	1,686	(30,583)
Decrease in accounts receivable – other	33,328	3,479	272,310
Increase (decrease) in notes and accounts payable	19,072	(27,457)	155,830
Increase in contract liabilities	8,740	—	71,411
Increase in advances received on uncompleted contracts	—	17,720	—
Decrease in accounts payable – other	(13,437)	(513)	(109,788)
Other	(895)	10,277	(7,313)
Subtotal	16,567	24,761	135,362
Interest and dividends received	5,342	3,344	43,647
Interest paid	(419)	(183)	(3,423)
Income taxes paid	(2,178)	(15,455)	(17,796)
NET CASH PROVIDED BY OPERATING ACTIVITIES	¥ 19,312	¥ 12,467	$ 157,790
CASH FLOWS FROM INVESTING ACTIVITIES:			
Payments for purchases of property, plant and equipment	¥ (5,468)	¥ (8,720)	$ (44,677)
Proceeds from sales of property, plant and equipment	10	46	82
Payments for purchases of investment securities	(2,435)	(5,627)	(19,895)
Payments for purchases of intangible assets	(4,340)	(1,487)	(35,460)
Proceeds from sales of investment securities	2,835	2,095	23,163
Proceeds from capital reduction of investments	1,065	—	8,701
Other	638	172	5,213
NET CASH USED IN INVESTING ACTIVITIES	(7,695)	(13,521)	(62,873)
CASH FLOWS FROM FINANCING ACTIVITIES:			
Proceeds from bonds	—	20,000	—
Repayments of bonds	—	(20,000)	—
Net increase in short-term loans	1,819	17	14,862
Proceeds from long-term loans	1,617	3,408	13,212
Repayments of long-term loans	(370)	(63)	(3,023)
Net increase in treasury stock	(1)	(1)	(8)
Cash dividends paid	(3,032)	(3,030)	(24,773)
Cash dividends paid to non-controlling interests	(33)	(34)	(270)
Other	(149)	(100)	(1,217)
NET CASH PROVIDED BY (USED IN) FINANCING ACTIVITIES	(149)	197	(1,217)
EFFECT OF EXCHANGE RATE CHANGES ON CASH AND CASH EQUIVALENTS	7,969	5,342	65,112
NET INCREASE IN CASH AND CASH EQUIVALENTS	19,437	4,485	158,812
CASH AND CASH EQUIVALENTS AT BEGINNING OF YEAR	268,281	261,899	2,192,017
INCREASE IN CASH AND CASH EQUIVALENTS FROM NEWLY CONSOLIDATED SUBSIDIARIES	291	1,897	2,378
CASH AND CASH EQUIVALENTS AT END OF YEAR	¥288,009	¥268,281	$2,353,207

Results of Value Creation

Group Companies

As of 31 March 2022

- Consolidated subsidiaries
- Affiliated companies accounted for by the equity method
- Affiliated companies not accounted for by the equity method

Total Engineering Business

Industry	Name	Country	Capital	Percentage of voting rights owned*1
EPC	JGC CORPORATION	Japan	¥1.0 billion	100%
	JGC JAPAN CORPORATION	Japan	¥1.0 billion	100%
	JGC ASIA PACIFIC PTE. LTD.	Singapore	S$2,100,000	100%
	JGC PHILIPPINES, INC.	Philippines	PHP1,300,000,000	100%
	PT. JGC INDONESIA	Indonesia	IDR 1,357,050,000	49% (14%)
	JGC Gulf International Co. Ltd.	Saudi Arabia	SAR262,500,000	100% (5%)
	JGC OCEANIA PTY LTD	Australia	A$913,800,000	100%
	JGC America, Inc.	U.S.A.	US$41,051,000	100%
	JGC Gulf Engineering Co. Ltd.	Saudi Arabia	SAR500,000	75% (75%)
	JGC Construction International Pte. Ltd.	Singapore	S$1,500,000	100% (100%)
	JGC ASIA PACIFIC (M) SDN. BHD.	Malaysia	MYR750,000	100% (100%)
	JGC Vietnam Co., Ltd.	Vietnam	VND519,831,000,000	100% (62%)
	Japan NuScale Innovation, LLC*2	U.S.A.	US$61,000,000	(69%)
Inspection / Maintenance	JGC PLANTECH AOMORI Co., Ltd.	Japan	¥50.0 million	100% (100%)
Process Licensing	Nikki-Universal Co., Ltd.	Japan	¥1.0 billion	50%

Functional Material Manufacturing Business

	Name	Country	Capital	Percentage of voting rights owned*1
	JGC Catalysts and Chemicals Ltd.	Japan	¥1.8 billion	100%
	Japan Fine Ceramics Co., Ltd.	Japan	¥0.3 billion	100%
	Nikki-Universal Co., Ltd.	Japan	¥1.0 billion	50%

Other Businesses

Industry	Name	Country	Capital	Percentage of voting rights owned*1
Equipment Procurement	JGC Trading & Services Co., Ltd.	Japan	¥40.0 million	24%
Specialized Consulting Services	Japan NUS Co., Ltd.	Japan	¥50.0 million	88%
Office Support Services	NIKKI BUSINESS SERVICES CO., LTD.	Japan	¥1,455.0 million	100%
Water Treatment	Swing Corporation	Japan	¥5.5 billion	33%
	Swing AM Corporation	Japan	¥0.1 billion	(100%)
	Swing Engineering Corporation	Japan	¥0.3 billion	(100%)
Oil and Gas Production Sales	JGC (GULF COAST), LLC	U.S.A.	US$56,050,000	100% (100%)
	JGC Exploration Eagle Ford LLC	U.S.A.	US$46,700,000	100% (100%)
	JGC EXPLORATION CANADA LTD.	Canada	C$160,885,000	100%
Water Desalination	Al Asilah Desalination Company S.A.O.C.	Oman	OMR500,000	75%
	A.R.C.HWLL	Bahrain	US$758,000	30%
	ASH SHARQIYAH OPERATION AND MAINTENANCE COMPANY LLC	Saudi Arabia	SAR1,000,000	29%
FPSO (Floating Production, Storage and Offloading system)	Japan Sankofa Offshore Production Pte. Ltd.	Singapore	S$31,634,000	26%

*1 Figures in parentheses ( ) in the voting rights ownership ratio are indirect ownership ratios, and figures in parentheses [ ] are ownership ratios held by persons closely related to or in agreement with the company, and are outside figures.

*2 Japan NuScale Innovation, LLC, in which the Company holds more than 50/100, is classified as an affiliate as it is a jointly controlled company.

Results of Value Creation

Stock Information

As of March 31, 2022

Authorized Shares
600,000,000

Issued and Outstanding Shares
259,336,682

Number of Shareholders
28,473

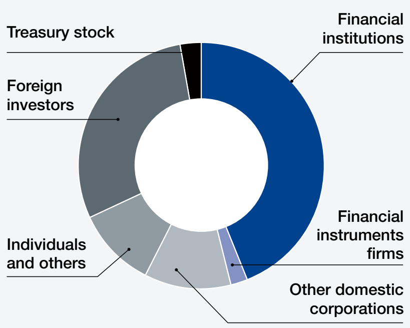
Administrator of the Shareholders' Register
Mitsubishi UFJ Trust and Banking Corp.
1-4-5, Marunouchi, Chiyoda-ku,
Tokyo 100-8212, Japan

Major Shareholders

	Number of shares (thousands)	Percentage of total (%)
The Master Trust Bank of Japan, Ltd. (Trust Account)	54,515	21.58
Custody Bank of Japan, Ltd. (Trust Account)	34,719	13.74
JGC Trading & Services Co., Ltd.	12,112	4.79
JGC-S SCHOLARSHIP FOUNDATION	8,433	3.33
Sumitomo Mitsui Banking Corporation	5,500	2.17
Custody Bank of Japan, Ltd. (Securities Investment Trust Account)	3,929	1.55
SSBTC CLIENT OMNIBUS ACCOUNT	3,626	1.43
THE BANK OF NEW YORK 133972	3,560	1.40
STATE STREET BANK AND TRUST COMPANY 505103	2,938	1.16
Mizuho Bank, Ltd.	2,899	1.14

(Notes) 1. Number of shares is rounded down to the nearest thousand. Percentage of total is rounded down to the second decimal place.
2. The Company holds 6,750 thousand shares (2.60%, 5th) of treasury stock, but this is excluded from the above list of major shareholders.
3. Percentage of total is calculated excluding treasury stock.

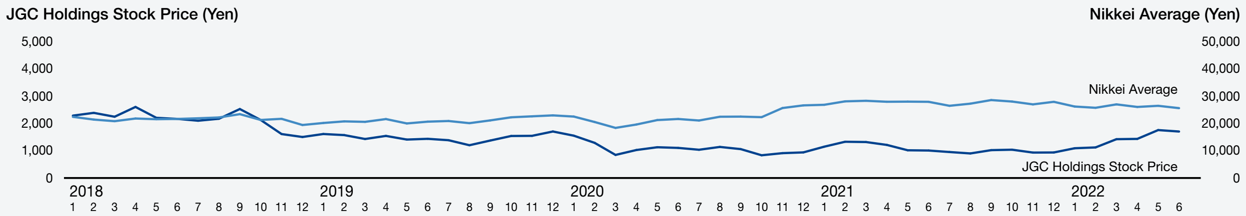
Distribution of Shareholders

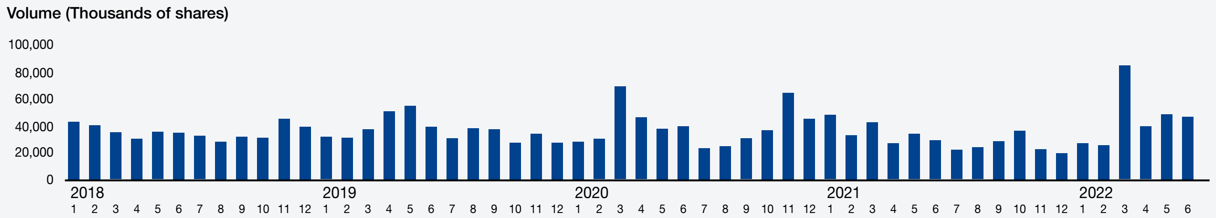


	(%)
Financial institutions	43.90
Financial instruments firms	2.35
Other domestic corporations	11.48
Individuals and others	10.52
Foreign investors	29.15
Treasury stock	2.60

Figures have been rounded down to the second decimal places.

Stock Price





Results of Value Creation

Outline of JGC

As of March 31, 2022

Company Name
JGC HOLDINGS CORPORATION

Head Office
2-3-1, Minato Mirai, Nishi-ku, Yokohama-shi, Kanagawa 220-6001, Japan

Established
October 25, 1928

Capital
¥23,672,780,000

Employees
283 (Consolidated: 7,275)

Independent Auditor
KPMG AZSA LLC

Information Provided